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Clinical Chemistry and Immunology

CUSTOMBIOTECH

We are CustomBiotech from Roche

Making your vision a reality

You are driving a paradigm shift. Scientific and technological advances emerging from creative companies like yours are transforming the way we look at disease and breaking down barriers to novel treatments. The path to these innovations, however, is accompanied by many challenges. How do you secure a supply chain in a global landscape? How do you ensure compliance in a demanding regulatory environment? How do you remain competitive in a fast-paced market? Now more than ever, business success hinges on working with suppliers who understand your needs and allow you to focus on what matters most.

What if all your needs were met by a single partner — a market leader with decades of experience in Biotechnology and *in vitro* Diagnostics working side by side with your team?

Introducing Roche CustomBiotech.
Leveraging the unique know-how of Roche Diagnostics and Roche Pharmaceuticals, we work with you to deliver high quality raw materials, instrumentation, products and services for your biopharmaceutical, cell therapy, or *in vitro* diagnostics business, customized to meet your unique quality and regulatory needs. Our support builds on four core benefits to help you succeed, from development to commercialization.

Innovation

Count on great ideas that work. From research and development to manufacturing and logistics, our experts and facilities cover an unparalleled spectrum of skills and technologies to explore any idea.

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Count on accessible and experienced support. From business and regulatory issues to production troubleshooting, we help safeguard your operations and market standing with fast answers to problems, anytime and anywhere.

Customization

Invest time and resources into what you do best. For everything else, rely on us. With customized development, manufacturing, labeling, packaging and filling of components, we streamline the path of your product to market.

Security

Set your mind at ease. Our global reach, stringent standards and state-of-the-art manufacturing mean a secured supply of products and services to drive your business forward, when and where needed.

Security and support with CustomBiotech

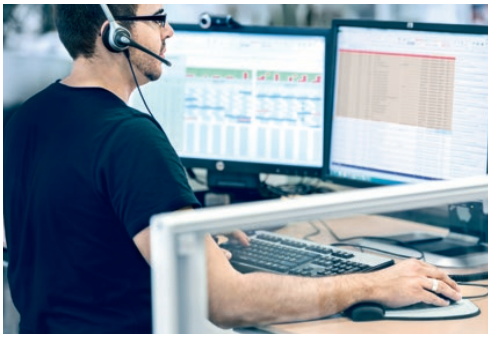
In your operations, behind your decisions, powering your products

Rely on a smart partner

As a long-standing industry leader, we have confronted many of the challenges you face as a diagnostics manufacturer. That experience and knowledge allows us to anticipate and overcome roadblocks. For you, this means access to unique insights from specialists who know the industry landscape and support from a team of experts who are passionate about solutions.

Secure your operations

At CustomBiotech, we are committed to support the long-term growth and evolution of your manufacturing — from small to large scale. Operating under stringent quality standards, we offer raw materials and assay components with proven lot-to-lot consistency in narrow specifications so that your products meet regulations. Our solutions enable streamlined workflows and traceable quality to strengthen your operational performance.



Our experts know and understand the industry landscape

World-class infrastructure

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The Roche CustomBiotech Team

Your gateway to the worldwide Roche network

Center of Excellence -
CustomBiotech headquarters in Penzberg

Our facilities in Penzberg are one of the largest and most productive biotechnology centers in Europe. With an unusual setup merging diagnostics and pharmaceutical know-how under one roof, Penzberg is a multidisciplinary incubator of novel technologies for production and automation processes, and a state-of-the-art manufacturer of high-quality raw materials and biotechnology products.


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Roche CustomBiotech regional headquarters
Roche production facilities
Tokyo Japan
Singapore
Cape Town South Africa
Penzberg Germany
Roche CustomBiotech global headquarters

Your strategic partner in diagnostics manufacturing

Clinical Chemistry assays and Immunoassays powered by Roche

Benefit from the pioneer's expertise in Diagnostics

For decades, Roche has been synonymous with excellent performance in the area of *in vitro* diagnostics. At the core of our market-leading products is an extensive portfolio of carefully designed and expertly manufactured assay components. These components — from enzymes, substrates and cofactors, to antibodies, antigens, streptavidin, biotin products, and immunoassay interference blockers — are available through CustomBiotech to bring your diagnostic product to market.

However, delivering raw materials of excellent quality is not enough. At Roche CustomBiotech, we strive to be your single strategic partner in enabling better diagnostics with leading Clinical Chemistry and Immunology solutions.

This catalog is designed to provide easy access to details about CustomBiotech raw materials for Clinical Chemistry and Immunology assays. For the most up-to-date product information, please visit custombiotech.roche.com, where you will find the entire CustomBiotech product portfolio.

Clinical Chemistry

Immunology


Roche

Clinical Chemistry

Diethanolamine 85%

solution

Catalog number	Pack size
10 201 294 103	custom fill

Will be supplied as “Diethanolamine 85%”. Unit of measure is “kg”.

For further processing only.

Buffer for enzymatic assays of alkaline phosphatase.

Application

Use Diethanolamine 85% as a buffer in applications that test or use the activity of alkaline phosphatase, such as diagnostic tests for alkaline phosphatase.

CAS: 111-42-2

Properties

Formula: $C_4H_{11}O_2N$
Molecular weight: 105.14 D
Solubility: Miscible with water and ethanol
Suggested pH range: Approximately 10

Specification

Appearance: Colorless, clear liquid
Solubility: Miscible with water, ethanol
***Refractive* index**: n 20/D: 1.4575-1.4595
Density: D 20/20: 1.092-1.095
Coloration of sample (against water):
A_{405}: ≤0.043
A_{405} (10 days at +4°C): ≤0.043
A_{405} (10 days at +35°C): ≤0.051
Diethanolamine ($HClO_4$ titration): 84.0-86.0%
Thin layer chromatography: Corresponds to reference
Mono-ethanolamine (TLC): ≤0.4%
Fe (calculated on diethanolamine 100%): ≤2 ppm
Heavy metals (as Pb, calculated on Diethanolamine 100%): ≤5 ppm
Water (K. Fischer): 14.0-16.0%
Stability: At +2 to +8°C within specification range 18 months.
Store dry. Protect from light. Keep in tightly sealed containers.

Glycylglycine

crystalline powder

Catalog number	Pack size
10 002 887 103	custom fill

Will be supplied as “Glycylglycine”. Unit of measure is “kg”.

For further processing only.

Zwitterionic buffer for diagnostic tests or as a substrate for γ-glutamyltransferase tests.

Application
Use Glycylglycine as a buffer in diagnostic reagents, or as a substrate in γ-glutamyltransferase tests where γ-glutamyltransferase transfers the gamma-glutamyl group of L-γ-glutamyl-3-carboxy-4-nitroanilide (Glupa-C) to glyclglycine.

CAS: 556-50-3

Properties
Formula: $C_4H_8N_2O_3$
Molecular weight: 132.1 D
Solubility: Easily soluble in water
Suggested pH range: 7.5-8.9

Specification
Appearance: White crystalline powder
Solubility: Easily soluble in water
pH value (c=0.35%, w/v): 5.5-6.5
Glycylglycine ($HClO_4$ titration, based on anhydrous substance): 99.0-100.5%
TLC: Corresponds to reference
A_{405} (c=10%; w/v, against water): ≤0.01%
Heavy metals (as Pb): ≤5 ppm
Water (K. Fischer): ≤0.5%
Fe: ≤10 ppm
Sulfate ash: ≤0.1%
Glycine (TLC): ≤0.2%
Contaminating amino acids (TLC): Not detectable
Microbiological test: Corresponds to specification
IR Spectrum: Corresponds to reference
Stability: At +15 to +40°C within specification range for 36 months. Store dry in tightly sealed containers.

Hepes
crystalline powder

Buffer for diagnostic tests, such as amylase test.

Catalog number	Pack size
10 172 944 103	custom fill

Will be supplied as ''Hepes''. Unit of measure is ''kg''.

For further processing only.

Application
Use Hepes as a buffer in reagents.

CAS: 7365-45-9

Properties

Nomenclature: 4-(2-Hydroxyethyl)-1-piperazineethanesulfonic acid
Formula: $C_8H_{18}N_2O_4S$
Molecular weight: 238.3 D
Suggested pH range: 6.8-8.2

Specification

Appearance: White crystalline powder
Solubility: Clear, colorless solution in water (c=1 mol/L)
pK value: 7.21-7.41 (+37°C); 7.45-7.65 (+20°C)
Melting range: +207 to +213°C
Hepes (alcalimetric): ≥97%
Hepes (from N): ≥97%
N (elementary analysis): ≥11.4%
Thin layer chromatography (TLC): Chromatographically homogeneous
A_{260} (against water): ≤0.050
A_{405} (against water): ≤0.030
Cl (chloride meter): ≤0.04%
Hepes mA/min (Purity check, α-amylase contamination): ≤0.1
Exclusion of skin contact and contamination with salvia: Corresponds to specification.
Stability: At +15 to +25°C within specification range for 24 months.

Imidazole

crystalline powder

Catalog number	Pack size
10 034 428 103	custom fill

Will be supplied as “Imidazole”. Unit of measure is “kg”.

For further processing only.

Buffer for diagnostic tests, such as creatine kinase test.

Application

Use Imidazole as a buffer for diagnostic tests and other reagents, especially enzymatic reactions such as creatine kinase test.

CAS: 288-32-4

Properties

Formula: $C_3H_4N_2$
Molecular weight: 68.08 D
Suggested pH range: 6.2-7.8

Specification

Appearance: White or slightly yellowish crystallizate
Melting range: +86 to +91°C
Imidazol (titrimetric): ≥99.0%
dA_{250} - dA_{360}: ≤0.050
dA_{334}: ≤0.050

dA_{405}: ≤0.010
Stability: At +15 to +25°C within specification range for 24 months.

Pipes
free acid

Catalog number	Pack size
10 239 500 103	custom fill

Will be supplied as ''Pipes, Free Acid''. Unit of measure is ''kg''.

For further processing only.

Buffer for diagnostic tests, such as cholesterol test.

Application
Use Pipes as a buffer in a variety of diagnostic tests, especially in tests for cholesterol and triglycerides.

CAS: 5625-37-6

Properties
Nomenclature: Piperazine-1,4-bis-2-ethane sulfonic acid
Formula: $C_8H_{18}N_2O_6S_2$
Molecular weight: 302.4 D
Suggested pH range: 6.1-7.5

Specification
Appearance: Colorless crystals
Solubility: Clear, colorless solution in water (c=10 mg/mL)
pK value: 6.8±0.1
Pipes (alkalimetric): ≥98%
Pipes (from N): ≥98%
A_{260} (c=10 mg/ml water) : ≤0.05
Thin layer chromatography (TLC): Chromatographically homogeneous
Br (ion chromatography): ≤0.5%
Identity (IR spectrum): Corresponds to reference
Stability: At +15 to +25°C within specification range for 24 months.

Pipes
disodium salt

Catalog number	Pack size
10 735 361 103	custom fill

Will be supplied as “Pipes, Sodium Salt”. Unit of measure is “kg”.

For further processing only.

Buffer for diagnostic tests, such as cholesterol test.

Application
Use Pipes as a buffer in a variety of diagnostic tests, especially in tests for cholesterol and triglycerides.

CAS: 5625-37-6

Properties
Nomenclature: Piperazine-1,4-bis-2-ethane sulfonic acid
Formula: $C_8H_{16}N_2O_6S_2Na_2$
Molecular weight: 346.3 D
Suggested pH range: 6.1-7.5

Specification
Appearance: White powder
Solubility: Clear, colorless solution in water (c=10 mg/mL)
Pipes (from N): ≥82%
Na (flame photometric): 11-14%
Water (K. Fischer): ≤5%
N (elementary analysis) : ≥7.6%
A_{340} (c=10 mg/ml water): ≤0.010
HPTLC: Chromatographically homogeneous
Heavy metals: ≤5 ppm
Identity (IR spectrum): Corresponds to reference
Stability: At +15 to +25°C within specification range for 24 months.

Tris
crystallizate

Catalog number	Pack size
10 153 265 103	custom fill

Will be supplied as “Tris-(hydroxymethyl)-aminomethane”. Unit of measure is “kg”.

For further processing only.

Buffer for diagnostic tests, such as tests for aminotransferases.

Application
Use Tris as a buffer in diagnostic reagents, especially in tests for aminotransferases or γ–glutamyltransferase.

CAS: 77-86-1

Properties
Nomenclature: Tris(hydroxymethyl)-amminomethane
Formula: $C_4H_{11}NO_3$
Molecular weight: 121.1 D
Suggested pH range: 7.0-9.0

Specification
Appearance: Colorless, odorless crystallizate
Solubility: Clear, colorless solution in water (c=100 mg/mL), free of fuzz
Flow properties: Passes
Melting range: +168 to +171°C
Conductivity (water, 1 µS, +25°C): ≤110 µS
pH value (c=6 mg/ml, in water): 10.0-11.0
Tris (titrimetric, based on dry weight): 99.5-100.5%
Water (K. Fischer): ≤0.2%
Sulfate ash (with concentrated H_2SO_4 at +600°C): ≤0.05%

Fe (AAS): ≤1 ppm
As (AAS): ≤1 ppm
Heavy metals (as Pb): ≤1 ppm
Reducing substances ($KMnO_4$, 0.002 mol/L): ≤3 mL/100 mg
Acetone (GC): ≤0.05%
Methanol (GC): ≤0.05%
Cl (turbidimetric test with $AgNO_3$): ≤20 ppm
Bioburden: ≤100 CFU/g
A_{300} (against water, c=100 mg/mL): ≤0.020
A_{405} (against water, c=100 mg/mL): ≤0.004
Stability: At +15 to +25°C within specification range for 24 months.
Protect from light.

MES, free acid

crystalline powder

Catalog number	Pack size
04 808 177 103	custom fill

Will be supplied as "4-Morpholineethane Sulfonic Acid (Mes)". Unit of measure is "kg".

For further processing only.

Buffer for a variety of diagnostic tests, such as glucose test.

Application

Use MES as a buffer in reagents that require a pH of approximately 6.

Properties

Nomenclature: 4-Morpholineethane sulphonic acid
Formula: $C_6H_{13}NO_4S$
Molecular weight: 195.2 D
Suggested pH range: 5.5-6.7

Specification

Appearance: White, crystalline powder
Solubility: Clear, colorless solution in water (20 mg/mL)
Identity (NIR): Corresponds to reference
PVS/IgI screening: ≤1 ppm
MES (alkalimetric, based on dry weight): ≥98.0%
Water (K. Fischer): ≤10.0%
Na (flame photometric): ≤20 ppm
Stability: At +15 to +25°C within specification range for 24 months.

Detergents

Application

Detergents are used in diagnostic kits to:

- enhance the solubility of test or sample compounds
- activate enzymes such as esterases
- reduce interference from serum lipids
- reduce carryover effects on analyzers and facilitate dispensing processes
- reduce non-specific binding to solid phases in immunoassays
- pretreat samples
- make use of possible antimicrobial effects

Properties

The choice of a specific detergent depends on the protein to be solubilized, the need of removal, toxicity data, interference with UV-VIS-absorption, interference with subsequent isoelectric focusing or ultracentrifugation.

	Ability to disperse protein aggregates	Denaturation of protein	Ease of removal
Non-ionic detergents			
n-Octyl-ß-D-glycoside	Low	No	Very easy
Polidocanol (Thesit)	Low	No	Difficult
n-Dodecyl-ß-D-maltoside	Low	No	Difficult
Tween 20	Low	No	Difficult
Ionic detergents			
Cholate	Low	(no)	Very easy
Deoxycholate	High	(no)	easy
Zwitterionic detergents			
CHAPS	High	No	Very easy

Dilaurylglycerosulfate

powder

Catalog number	Pack size
11 827 294 103	custom fill

Will be supplied as “Dilaurylglycerosulfat”. Unit of measure is “g”.

For further processing only.

Detergent for diagnostic tests.

Application

Use Dilaurylglycerosulfate as a co-emulsifier in the diagnostic test for the determination of lipase.

CAS: 99387-94-7

Properties

Formula: $C_{27}H_{56}O_6S$
Molecular weight: 508.8 D

Specification

Appearance: White powder
Dilaurylglycerosulfate (from C): ≥90%
C (elementary analysis): ≥57.3%
H (elementary analysis): ≥10.0%
Water (K. Fischer): ≤5%
Stability: At +2 to +8°C within specification range for 12 months.

Cholate

ionic detergent, sodium salt

Catalog number	Pack size
10 261 084 103	custom fill

Will be supplied as “Cholic Acid Sodium Salt”. Unit of measure is “kg”.

For further processing only.

Anionic detergent for diagnostic tests.

Application

Use Cholate in diagnostic reagents, such as for the determination of cholesterol and triglycerides.

CAS: 81-25-4

Properties

Formula: $C_{24}H_{39}NaO_5$
Molecular weight: 430.6 D
Detergent type: Anionic detergent
Solubility: Limited solubility in the presence of Ca^{2+}
Handling advice: Harmful if exposed to skin and if inhaled. Adequate precautions as for handling of irrigating products must be taken.

Specification

Appearance: White crystalline powder
Solubility:
Clear, colorless solution in water (c=10 mg/mL)

Clear, colorless to yellowish solution in water (c=150 mg/mL, +20°C)
Identity (NIR): Corresponds to reference
Cholic acid, Na-salt (HPLC): ≥93 area%
Water (K. Fischer): ≤6%
C (elementary analysis): 62-67%
Na (flame photometric): 5.0-5.5%
Heavy metals (as Pb): ≤10 ppm
Flame coloration: Positive
A_{340} (against water): ≤0.100
A_{505} (against water): ≤0.005
A_{546} (against water): ≤0.005
A_{505} to A_{550} (against water): ≤0.025
Hydrophilic contaminants (HPLC): ≤15 area%
Lipophilic contaminants (HPLC): ≤4.0 area%
Reducing substances: ≤0.25 ml ($KMnO_4$, 0.002 mol/L, per 100 mg)
Oxidizing substances: Negative
Bioburden: ≤100 CFU/g, ≤10 moulds/g
Performance: Corresponds to specification
Stability: At +15 to +25°C within specification range for 36 months. Protect from light.

Deoxycholate

ionic detergent, sodium salt

Catalog number	Pack size
11 434 314 103	custom fill

Will be supplied as “Desoxycholat, Mono-NA, Crystal”. Unit of measure is “kg”.

For further processing only.

Anionic detergent for diagnostic tests.

Application

Use Deoxycholate in diagnostic reagents, such as for the determination of lipase.

CAS: 83-44-3

Properties

Formula: $C_{24}H_{39}O_4Na$
Molecular weight: 414.6 D
Detergent type: Anionic detergent
Handling advice: Harmful if exposed to skin and if inhaled. Adequate precautions as for handling of irrigating products must be taken.

Specification

Appearance: White, crystalline powder
Solubility: Clear, colorless solution in water (c=50 mg/mL), free of fuzz
Deoxy cholic acid (sodium deoxycholate, HPLC): ≥83.0 area%
Hydrophilic contaminants: ≤15.0 area%
Lipophilic contaminants: ≤5.0 area%
Water (K. Fischer): ≤10.0%

Acetone (GC): ≤0.5%
Heavy metals (as Pb): ≤5 ppm
Stability: At +15 to +25°C within specification range for 36 months.

Taurodesoxycholat

sodium salt

Anionic detergent for diagnostic tests.

Application

Use Taurodesoxycholat in diagnostic reagents, such as for the determination of lipase.

CAS: 1180-95-6

Properties

Formula: $C_{26}H_{44}NO_6SNa$
Molecular weight: 521.7 D
Detergent type: Anionic detergent
Handling advice: Harmful if exposed to skin and if inhaled. Adequate precautions for handling hazardous products must be used.

Specification

Appearance: White lyophilizate
Taurodesoxy cholate, Na (from C): ≥90%
Taurodesoxy cholate, Na (HPLC): ≥89 area%
C (elementary analysis): 53.9-61.0%
H (elementary analysis): 7.9-8.9%
N (elementary analysis): 2.4-3.0%
Na (flame photometric): 4.4-6.6%
Water (K. Fischer): ≤5%
Stability: At +2 to +8°C within specification range for 24 months.

Catalog number	Pack size
11 332 686 103	custom fill

Will be supplied as “Taurodesoxycholic. acid, Na, pur.”. Unit of measure is “g”.

For further processing only.

n-Dodecyl-β-D-maltoside

nonionic detergent, powder

Catalog number	Pack size
10 808 342 103	custom fill

Will be supplied as “n-Dodecyl-b-D-maltoside”. Unit of measure is “g”.

For further processing only.

Nonionic detergent for diagnostic tests

Application

Use n-Dodecyl-β-D-maltoside as a mild, nondenaturing detergent for the solubilization of proteins, especially antibodies.

CAS: 69227-93-6

Properties

Nomenclature: 1-O-n-Dodecyl-β-D-glucopyranosyl(1-4)α-D-glucopyranoside
Formula: $C_{24}H_{46}O_{11}$
Molecular weight: 510.62 D
Detergent type: Nonionic alkyl maltoside type

Specification

Appearance: Wite, crystalline powder
Specific rotation [α] 25/D (in MeOH): +46.0±2.0°
n-Dodecylmaltoside (from C): ≥98%
C (elementary analysis): ≥55.20%
Dodecanol (GC): ≤0.10%
Stability: At +15 to +25°C within specification range for 24 months.

n-Octyl β-D-glucoside

nonionic detergent, powder

Catalog number	Pack size
10 411 469 103	custom fill

Will be supplied as “n-Octylglucoside”. Unit of measure is “g”.

For further processing only.

Nonionic detergent for diagnostic tests

Application

Use n-Octyl β-D-glucoside as a mild, nondenaturing detergent for the solubilization of proteins, especially antibodies. n-Octyl β-D-glucoside can be easily removed by dialysis.

CAS: 29836-26-8

Properties

Nomenclature: 1-O-Octyl-β-D-glucopyranoside
Formula: $C_{14}H_{28}O_6$
Molecular weight: 292.4 D
Detergent type: Nonionic alkyl glucoside type
pH stability: Stable in solutions above pH 6.5

Specification

Appearance: White powder
n-Octylglucoside (from C): ≥99%
C (elementary analysis): ≥56.9%
Octanol (GC): ≤0.1%
Stability: At +15 to +25°C within specification range for 36 months. Store dry.

Polidocanol (Thesit)

Nonionic detergent for use in diagnostic reagents.

Catalog number	Pack size
10 831 620 103	custom fill

Will be supplied as "Polidocanol (PEG Monododecyl Ether)". Unit of measure is "kg".

For further processing only.

Application

Use Polidocanol in diagnostic reagents to enhance solubility, minimize interferences and reduce carryover effects.

CAS: 9002-92-0

Properties

Nomenclature: Dodecylpolyethyleneglycolether
Formula: $C_{30}H_{62}O_{10}$ (n=approximately 9)
Molecular weight: Approximately 600 D
Detergent type: Nonionic polyoxyethylene type
Handling advice: Polydocanol must be moderately heated (+40 to +50°C) and carefully homogenized by gentle stirring before dispensing.

Specification

Appearance: White, pasty, fatty substance; clear, colorless to slightly yellow liquid at approximatly +30°C
Solubility: Clear, colorless solution in water (c=100 mg/mL)
Peroxide (as H_2O_2): ≤1 ppm
Stability: At +2 to +8°C within specification range for 24 months. Keep under argon or nitrogen. Protect from light.

Tween 20

purified, solution

Non-ionic detergent for diagnostic tests.

Catalog number	Pack size
11 334 000 103	custom fill

Will be supplied as ''Tween 20, gereinigt, Lsg''. Unit of measure is ''L''.

For further processing only.

Application

Use Tween 20 as non-denaturing detergent for the solubilization of proteins, especially antibodies.

CAS: 9005-64-5

Properties
Formula: $C_{58}H_{114}O_{26}$ (for w+x+y+z=n=20)
Molecular weight: 1228 g/mol

Specification
Appearance: Clear, yellow solution
Conductivity: ≤100 µS/cm
Peroxide (as H_2O_2): ≤2 ppm
Aldehyde: ≤0.02 mg/ml
Stability: At +2 to +8°C within specification range for 24 months. Store under nitrogen. Protect from light.

CHAPS
zwitterionic detergent, crystalline powder

Catalog number	Pack size
10 810 681 103	custom fill

Will be supplied as “CHAPS”. Unit of measure is “kg”.

For further processing only.

Zwitterionic detergent for diagnostic tests.

Application
Use CHAPS to reduce protein-protein interactions. CHAPS can be easily removed by dialysis.

CAS: 75621-03-3

Properties
Nomenclature: 3-[(3-Cholamidopropyl)dimethylammonio]-1-propanesulfonate
Formula: $C_{32}H_{58}N_2O_7S$
Molecular weight: 614.9 D
Detergent type: Zwitterionic detergent, nondenaturating

Specification
Appearance: White, crystalline powder
CHAPS (from N): ≥99%
N (elementary analysis): ≥4.49%
A_{260} (against water): ≤0.10
A_{280} (against water): ≤0.10
Thin layer chromatography (TLC): Chromatographically homogeneous, corresponds to reference
Stability: At +2 to +8°C within specification range for 24 months. Store dry. Protect from light.

CHAPSO

zwitterionic detergent, crystalline powder

Zwitterionic detergent for diagnostic tests.

Application

Use CHAPSO to reduce protein-protein interactions. CHAPSO can be easily removed by dialysis.

CAS: 82473-24-3

Properties

Nomenclature: 3-[(3-Cholamidopropyl)dimethylammonio]-2-hydroxy-1-propansulfonate
Formula: $C_{32}H_{58}N_2O_8S$
Molecular weight: 630.9 D
Detergent type: Zwitterionic detergent, similar to CHAPS but more soluble.
Handling advice: Harmful if exposed to skin and if inhaled. Adequate precautions as for handling of irrigating products must be taken.

Specification

Appearance: White crystalline powder
CHAPSO (from C): ≥95%
C (elementary analysis): ≥57.6%
Water (K. Fischer): ≤4%
HPTLC: Chromatographically homogeneous
Stability: At +2 to +8°C within specification range for 36 months.

Catalog number	Pack size
11 112 392 103	custom fill

Will be supplied as “CHAPSO”. Unit of measure is “g”.

For further processing only.

cOmplete, EDTA free

7500 tablets in glass vial

Catalog number	Pack size
04 574 834 001	7500 tablets in glass vial

Will be supplied as ''Complete''. Unit of measure is ''piece''.

Mix of protease inhibitors

Application

cOmplete, EDTA-free is used for the inhibition of serine and cysteine proteases in bacterial, yeast, plant, and animal cell extracts. cOmplete, EDTA-free Tablets, are used for the inhibition of proteolytic activity in large volumes (up to 50 mL) in which EDTA may interfere with protein stability (*e.g.*, metal-containing proteins) or subsequent assays.

Specification

Appearance: White tablets
Resolving time: ≤180 seconds
Abrasion: ≤1.0%
Diameter of tablets (average): 6 mm
Height of tablets (average): 1.75-2.00 mm
Weight of tablets (average): 56.0-66.0 mg
Homogenity of lot (based on weight of tablets): S<3.0
Inhibition of pancrease, chymotrypsin and thermolysin (after 60 minutes at +20 to +25°C):
pancrease: ≥90%
chymotrypsin: ≥90%
thermolysin: ≤15%
Stability: At +2 to +8°C within specification range for 24 months.

Aprotinin

from bovine lung, lyophilizate

Catalog number	Pack size
10 236 632 103	custom fill

Will be supplied as ''Aprotinin from Bovine Lung''. Unit of measure is ''g''.

For further processing only.

Protease inhibitor

Application

Use Aprotinin in reagents to inhibit serine proteases, such as kallikrein, plasmin, trypsin and chymotrypsin.

CAS: 9087-70-1

Specification

Appearance: White lyophilizate
Activity (Chromozym TRY, +25°C): ≥630 inhibitor U/mg lyophilizate
Activity (BAEE, +25°C): ≥200 inhibitor U/mg lyophilizate
Protein (Lowry): 90-100%
Electrophoresis (SDS Page): Corresponds to reference
Country of origin: USA, South Africa, New Zealand, Australia, or Uruguay, respective

Stability: At +2 to +8°C within specification range for 12 months.
Store dry.
Remarks:
Official veterinary certificate of health of the donor animals is available.
Official certificate of the deactivation of animal material including the method (acid treatment at up to pH 5 for up to 5 h) is available.

Pefabloc SC (AEBSF)

4-(2-Aminoethyl)-benzenesulfonyl fluoride hydrochloride, powder

Protease inhibitor

Application

Use Pefabloc in reagents to inhibit serine proteases, such as thrombin in serum or plasma.

CAS: 34284-75-8

Properties

Molecular weight: 239.5 D

Specification

Appearance: White powder
Pefabloc HCl (HPLC): ≥90 area%
Pefabloc HCl (from C): ≥95% (theory 100%)
C (elementary analysis): ≥38.1% (theory 40.08%)
H (elementary analysis): ≥4.2% (theory 4.59%)
N (elementary analysis): ≥5.5% (theory 5.84%)
Thin layer chromatography (TLC): Chromatographically homogeneous
Inhibition chymotrypsin: Corresponds to specification
Stability: At +2 to +8°C within specification range for 24 months.

Catalog number	Pack size
11 427 393 103	custom fill

Will be supplied as “Pefabloc SC AEBSF, Hydrochloride”. Unit of measure is “g”.

DRY ICE

For further processing only.

1,4-Dithiothreitol (DTT)

crystallizate

Catalog number	Pack size
10 197 785 103	custom fill

Will be supplied as “Dithiothreitol (DTT) Cleland’s Reagent”. Unit of measure is “g”.

For further processing only.

Reducing agent

Application

Use 1,4-Dithiothreitol primarily to protect free SH-groups from oxidation. Use it routinely in all work with enzymes and proteins during enzyme measurement and the characterization of proteins.

CAS: 3483-12-03

Properties

Nomenclature: Threo-1,4-dimercapto-2,3-butanediol
Formula: $C_4H_{10}O_2S_2$
Molecular weight: 154.3 D

Specification

Appearance: White to yellowish crystallizate
DTT (with Ellman’s reagent): ≥97%
Thin layer chromatography: Chromatographically homogeneous, corresponds to reference
Stability: At +2 to +8°C within specification range for 24 months. Store dry. Protect from light.

3-Hydroxy-1,2,3,4-tetrahydrobenzo[h] quinoline

crystalline powder

Catalog number	Pack size
10 003 174 103	custom fill

Will be supplied as “BM 32.027”. Unit of measure is “kg”.

For further processing only.

Chemical for dry chemistry diagnostic tests

Application

Use 3-Hydroxy-1,2,3,4-tetrahydrobenzo[h]quinoline in dry chemistry application for the determination of urea.

CAS: 5423-67-6

Properties

Nomenclature: 3-Hydroxy-1,2,3,4-tetrahydrobenzo[h]quinoline
Formula: $C_{13}H_{13}NO$
Molecular weight: 199.25
Toxicity: Harmful

Specification

Appearance: White to greyish powder
Solubility: Clear, colorless solution in methanol (c=0.2%; w/v)
Melting range: +150 to +154°C
Loss on drying: ≤0.5%
Sulphate ash: ≤0.2%
3-Hydroxy-1,2,3,4-tetrahydrobenzo[h]quinoline ($HClO_4$ titration, based on dried substance): 98.0–102.0%
UV/VIS spektrum:
Maximum I: 250 to 254 nm (specific absorbance ($A_{1\%/1cm}$): 988–1050)
Maximum II: 334 to 338 nm (specific absorbance ($A_{1\%/1cm}$): 286–306)
Thin layer chromatography (TLC): Corresponds to reference
IR Spectrum: Corresponds to reference
Stability: At +2 to +8°C within specification range for 24 months. Protect from light.

D-Mannitol

reduced sodium

Excipient (inactive substance) for the production of tablets or granulated material

Catalog number	Pack size
11 371 754 103	custom fill

Will be supplied as “D-Mannit, Na-arm”. Unit of measure is “kg”.

For further processing only.

Application

Use D-Mannitol as an excipient (inactive substance) to produce tablets or granulated material that contain reagents or components used in diagnostic applications.

CAS: 69-65-8

Properties

Formula: $C_6H_{14}O_6$
Molecular weight: 182.2 D

Specification

Appearance: White, silky crystals or white, crystalline powder
Solubility: Clear, colorless solution in water (c=10%, w/v), slightly soluble in water and hot ethanol, heavy soluble in ethanol
Melting range: +166 to +168°C
Specific rotation (c=10%, w/v, calculated on dry substance): +23.0° to +25.0°
Purity (HPLC): D-Mannit: ≥97.5 area%
Alkaline impurities (calculated as NaOH): ≤80 ppm
Acid impurities (calculated as HCl): ≤45 ppm
Cl: ≤50 ppm
Fe: ≤0.1 ppm
Ni: ≤1 ppm

Reducing sugar: Corresponds to reference
Heavy metals (as Pb): ≤2 ppm
Sulphate: ≤100 ppm
Sulphate ash: ≤500 ppm
Loss on drying: ≤0.3%
Na: ≤200 ppm
Microbiological analysis: Corresponds to reference
Stability: At +15 to +25°C within specification range for 36 months. Store dry. Protect from light.

Kryptofix 221

solution

Catalog number	Pack size
11 183 958 103	custom fill

Will be supplied as "Kryptofix 221". Unit of measure is "kg active ingredient".

For further processing only.

Cryptant that binds cations in aqueous solutions

Application

Use Kryptofix 221 in enzymatic tests for potassium to decrease the sodium concentration relative to potassium.

CAS: 31364-42-8

Properties

Formula: $C_{16}H_{32}N_2O_5$
Molecular weight: 332.44 D

Specification

Appearance: Clear, yellow liquid
Solubility: Clear yellowish solution in water (c=4 mg/mL)
A_{340} (aqueous solution): ≤0.100
A_{405} (aqueous solution): ≤0.060
Identity (NIR): Corresponds to reference
^{13}C-NMR spectrum: Corresponds to masterlot
Kryptofix 221 agent (HPLC; based on masterlot): ≥75%
Na (AES): ≤65 ppm
K (AES): ≤5 ppm
NH_3 (evolution in buffer; after 10 days at +55°C): ≤50 µmol/L
Stability: At +2 to +8°C within specification range for 12 months. Keep under nitrogen. Protect from light.

Valinomycin

crystallizate

Potassium selective ionophoric cyclodepsipeptide

Catalog number	Pack size
10 161 594 103	custom fill

Will be supplied as “Valinomycin”. Unit of measure is “g”.

For further processing only.

Application

Use Valinomycin in diagnostic tests for potassium where it acts as an ion carrier in potassium selective electrodes.

CAS: 2001-95-8

Properties

Formula: $C_{54}H_{90}N_6O_{18}$
Molecular weight: 1111.4 D

Specification

Appearance: White crystallizate
Solubility: Clear, colorless solution in chloroform (c=10 mg/mL)
Melting point: ≥+183°C
Specific rotation (in chloroform):: +30.0±2.0°
Valinomycin (from N): ≥94%
Valinomycin (HPLC): ≥85.0 area%
C (elementary analysis) : ≥54.86%
H (elementary analysis) : ≥7.67%
N (elementary analysis): ≥7.10%
Thin layer chromatography (HPTLC):
a) UV: Homogeneous
b) to spray with H_2SO_4 (1%); to vaporize with Iodine: Corresponds to reference
Stability: At +2 to +8°C within specification range for 36 months. Store in safety zone dedicated to poisonous agents.

Acetyl-Coenzyme A

trilithium salt

Catalog number	Pack size
10 150 932 103	custom fill

Will be supplied as ''Acetyl Coenzyme A (Acetyl-CoA) Tri-Li''. Unit of measure is ''g''.

DRY ICE

For further processing only.

Cofactor for carnitine acetyl transferase

Application

Use Acetyl-Coenzyme A for the determination of L-carnitine.

CAS: 72-89-9

Properties

Formula: $C_{23}H_{35}N_7O_{17}P_3SLi_3$
Molecular weight: 827.4 D (Acetyl-CoA: 809.6 D)

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in water (c=10 mg/mL)
Acetyl-CoA (enzymatic): ≥83%
Acetyl-CoA (A_{260}, ε=16.0 [L x $mmol^{-1}$ x cm^{-1}]): ≥85%
Li (flame photometric): 2±0.3%
Stability: At -15 to -25°C within specification range for 12 months.
Store dry.

Coenzyme A, Grade I

free acid

Catalog number	Pack size
10 151 009 103	custom fill

Will be supplied as ''Coenzyme A (CoA), Free Acid, Grade I''. Unit of measure is ''g''.

DRY ICE

For further processing only.

Coenzyme A is a cofactor for some enzymes, *e.g.,* citrate lyase.

Application

Use Coenzyme A in diagnostic tests measuring citrate or citrate lyase. It is also used as an enhancer of luciferase light emission or as a precursor for Acetyl-Coenzyme A or in other chemical or enzymatical reactions.

CAS: 85-61-0

Properties

Formula: $C_{21}H_{36}N_7O_{16}P_3S$
Molecular weight: 767.6 D (CoA: 767.6 D)

Specification

Appearance: White to slightly yellow lyophilizate
CoA, reduced (enzymatic, 10 U phosphotransacetylase): ≥85%
CoA (A_{260}, ε=16.0 [L x $mmol^{-1}$ x cm^{-1}]): ≥88%
Water (K. Fischer): ≤6%
Glutathione, reduced (enzymatic): ≤1%

Stability: At -15 to -25°C within specification range for 12 months.
Store dry.

Coenzyme A, Grade I

trilithium salt

Catalog number	Pack size
10 121 541 103	custom fill

Will be supplied as ''Coenzyme A (CoA), Tri-Li Salt, Grade I''. Unit of measure is ''g''.

DRY ICE

For further processing only.

Coenzyme A is a cofactor for some enzymes, *e.g.,* citrate lyase.

Application

Use Coenzyme A in diagnostic tests measuring citrate or citrate lyase. It is also used as an enhancer of luciferase light emission or as a precursor for Acetyl-Coenzyme A or in other chemical or enzymatical reactions.

CAS: 85-61-0

Properties

Formula: $C_{21}H_{33}N_7O_{16}P_3SLi_3$
Molecular weight: 785.4 D (CoA: 767.6 D)

Specification

Appearance: White to slightly yellow lyophilizate
CoA, reduced (enzymatic, with 10 U phosphotransacetylase): ≥83%
CoA (A_{260}, ε=16.0 [L x $mmol^{-1}$ x cm^{-1}]): ≥84%
Water (K. Fischer): ≤6%
Glutathione, reduced (enzymatic): ≤1%
Stability: At -15 to -25°C within specification range for 12 months.

Coenzyme A, Grade II

trilithium salt

Catalog number	Pack size
10 155 969 103	custom fill

Will be supplied as ''Coenzyme A (CoA), Ttri-Li, Grade II''. Unit of measure is ''g''.

DRY ICE

For further processing only.

Coenzyme A is a cofactor for some enzymes, *e.g.,* citrate lyase.

Application

Use Coenzyme A in diagnostic tests measuring citrate or citrate lyase. It is also used as an enhancer of luciferase light emission or as a precursor for Acetyl-Coenzyme A or in other chemical or enzymatical reactions.

CAS: 85-61-0

Properties

Formula: $C_{21}H_{33}N_7O_{16}P_3SLi_3$
Molecular weight: 785.4 D (CoA: 767.6 D)

Specification

Appearance: White to slightly yellow lyophilizate
CoA, reduced (enzymatic, with 10 U phosphotransacetylase): ≥73%
CoA (A_{260}, ε= 16.0 [L x $mmol^{-1}$ x cm^{-1}]): ≥81%
Water (K. Fischer): ≤8%
Stability: At -15 to -25°C within specification range for 12 months.
Store dry.

FAD

disodium salt

Cofactor for dehydrogenases and oxidases.

Application

Use FAD as a cofactor in a variety of enzymatic test or assays to activate enyzmes, especially diagnostic tests for triglycerides.

CAS: 146-14-5

Properties

Nomenclature: Flavine-adenine dinucleotide
Formula: $C_{27}H_{31}N_9O_{15}P_2Na_2$
Molecular weight: 829.6 D (FAD: 785.7 D)

Specification

Appearance: Yellow powder
FAD (A_{450}, ε=11.3 [L x $mmol^{-1}$ x cm^{-1}]): ≥86%
Na (flame photometric): 5±1%
Water (K. Fischer): ≤9%
P_i: ≤0.6%
Stability: At +2 to +8°C within specification range for 24 months.
Protect from light.

Catalog number	Pack size
10 154 032 103	custom fill

Will be supplied as "Flavine-adenine Dinucleotide (FAD), Di-Na". Unit of measure is "g".

For further processing only.

NAD, Grade I

free acid

Cofactor for dehydrogenases, *e.g.,* lactate dehydrogenase.

Application

Use NAD, Grade I as a cofactor in a variety of diagnostic tests, such as for the determination of ethanol and lactate dehydrogenase.

CAS: 53-84-9

Catalog number	Pack size
10 004 618 103	custom fill

Will be supplied as "b-Nicotinamide-adenine Dinucleotide, I". Unit of measure is "kg".

For further processing only.

Properties
Formula: $C_{21}H_{27}N_7O_{14}P_2$
Molecular weight: 663.4 D

Specification
Appearance: Colorless to slightly yellowish lyophilizate
Solubility: Clear, colorless to slightly yellowish solution in water (c=200 mg/mL)
β-NAD (from value found enzymatically, based on dry weight): ≥99%
β-NAD (enzymatic, A_{340}): ≥96.5%
β-NAD (A_{260}, ε=17.6 [L x $mmol^{-1}$ x cm^{-1}]): ≥96.5%
NAD (HPLC): ≥98 area%
Water (K. Fischer): ≤3.0%
Fe (AA): ≤50 ppm
AMP (enzymatic): ≤0.1%
Ethanol (GC): ≤30 ppm
Aceton, isopropanol, methanol (GC): each ≤0.05%
Reaction rates (LDH) based on NAD II, acid: 95-105%
A_{250}/A_{260}: 0.81-0.85
A_{280}/A_{260}: 0.20-0.24
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

NAD, Grade II
free acid

Cofactor for dehydrogenases, *e.g.,* lactate dehydrogenase.

Catalog number	Pack size
10 004 626 103	custom fill

Will be supplied as “b-Nicotinamide-adenine Dinucleotide, II”. Unit of measure is “kg”.

For further processing only.

Application
Use NAD, Grade II as a cofactor in a variety of diagnostic tests, such as for the determination of ethanol and lactate dehydrogenase.

CAS: 53-84-9

Properties
Formula: $C_{21}H_{27}N_7O_{14}P_2$
Molecular weight: 663.4 D

Specification
Appearance: Colorless to slightly yellowish lyophilizate
Solubility: Clear, colorless to slightly yellowish solution in water (c=200 mg/mL)
β-NAD (from value found enzymatically, based on dry weight): ≥97.5%
β-NAD (enzymatic, A_{340}): ≥94.5%
NAD (A_{260}, ε=17.6 [L x $mmol^{-1}$ x cm^{-1}]): ≥94.5%
NAD (HPLC): ≥95 area%

Water (K. Fischer): ≤3.5%
Fe (AAS): ≤25 ppm
AMP (enzymatic): ≤0.1%
Ethanol (GC): ≤40 ppm
Aceton, isopropanol, methanol (GC): ≤0.1%, ≤0.15%, ≤0.15%
Reaction rates (LDH) based on NAD II, acid: 95-105%
A_{250}/A_{260}: 0.81-0.85
A_{280}/A_{260}: 0.20-0.24
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

NADH, Grade I

disodium salt

Catalog number	Pack size
10 004 634 103	250 g or custom fill

Will be supplied as "b-NADH, Reduced, Disodium Salt, Grade I". Unit of measure is "kg".

For further processing only.

Cofactor for a variety of dehydrogenases, *e.g.*, malate dehydrogenase and lactate dehydrogenase.

Application

Use NADH, Grade I, as a cofactor in a variety of diagnostic tests, such as for glutamate dehydrogenase, lactate dehydrogenase, α-hydroxybutyrate dehydrogenase, aminotransferases and urea.

CAS: 58-68-4

Properties

Formula: $C_{21}H_{27}N_7O_{14}P_2Na_2$
Molecular weight: 709.4 D (NADH: 665.4 D)

Specification

Appearance: White to slightly yellowish amorphous powder
Solubility: Clear, colorless to slightly yellowish solution in water (c=50 mg/mL)
NADH-Na_2 (calculated from value found enzymatically, based on dry weight): ≥99%
NADH (enzymatic): ≥85%
NADH (A_{340}, ε=6.3 [L x $mmol^{-1}$ x cm^{-1}]): ≥85%
NADH (A_{260}, ε=14.3 [L x $mmol^{-1}$ x cm^{-1}]): ≥85%
Na (flame photometric): 6.5±0.5%
Water (K. Fischer): ≤5%
NAD (enzymatic): ≤0.5%
AMP (enzymatic): ≤0.2%
Ethanol (GC): ≤4%
Reaction rates (LDH) based on standard: 95-105%
A_{260}/A_{340}: ≤2.35
A_{260}/A_{240}: 1.57-2.17

Stability: At +2 to +8°C within specification range for 12 months. Keep under nitrogen. Protect from light.

NADH, Grade II

disodium salt

Cofactor for a variety of dehydrogenases, *e.g.,* malate dehydrogenase and lactate dehydrogenase.

Application

Use NADH, Grade II, as a cofactor in a variety of diagnostic tests, such as for glutamate dehydrogenase, lactate dehydrogenase, α-hydroxybutyrate dehydrogenase, aminotransferases and urea.

CAS: 58-68-4

Properties

Formula: $C_{21}H_{27}N_7O_{14}P_2Na_2$
Molecular weight: 709.4 D (NADH: 665.4 D)

Specification

Appearance: White to slightly yellowish amorphous powder
Solubility: Clear, colorless to slightly yellowish solution in water (c=50 mg/mL)
NADH-Na_2 (calculated from value found enzymatically, based on dry weight): ≥98%
NADH (enzymatic): ≥84%
NADH (A_{340}, ε=6.3 [l x $mmol^{-1}$ x cm^{-1}]): ≥84%
NADH (A_{260}, ε=14.3 [l x $mmol^{-1}$ x cm^{-1}]): ≥85%
Na (flame photometric): 6.5±0.5%
Water (K. Fischer): ≤6%
NAD (enzymatic): ≤1%
AMP (enzymatic): ≤0.2%
Ethanol (GC): ≤4%
Reaction rates (LDH) based on standard: 95-105%
A_{260}/A_{340}: ≤2.40
A_{260}/A_{240}: 1.57-2.17
Stability: At +2 to +8°C within specification range for 12 months. Keep under nitrogen. Protect from light. Store dry.

Catalog number	Pack size
10 004 642 103	250 g or custom fill

Will be supplied as “b-NADH, Reduced, Disodium Salt, Grade II”. Unit of measure is “kg”.

For further processing only.

NADH, Grade II

for potassium test, disodium salt

Catalog number	Pack size
11 333 925 103	custom fill

Will be supplied as “NADH Di-Na, Grade II for Potassium Test”. Unit of measure is “kg”.

DRY ICE

For further processing only.

NADH quality for enzymatic potassium test.

Application

Use this special NADH as a cofactor in a diagnostic test for potassium, together with glutamate dehydrogenase to remove ammonia from the reaction mixture.

CAS: 58-68-4

Properties

Formula: $C_{21}H_{27}N_7O_{14}P_2Na_2$
Molecular weight: 709.4 D (NADH: 665.4 D)

Specification

Appearance: White to slightly yellowish amorphous powder
Solubility: Clear, colorless to slightly yellowish solution in water (c=50 mg/mL)
NADH-Na_2 (from content found enzymatically, based on dry weight): ≥98%
NADH (enzymatic): ≥82%
NADH (A_{340}, ε=6.3 [L x $mmol^{-1}$ x cm^{-1}]): ≥84%
NADH (A_{260}, ε=14.3 [L x $mmol^{-1}$ x cm^{-1}]): ≥85%
Na (flame photometric): 6.5±0.5%
K (AAS): ≤250 ppm
Water (K. Fischer): ≤6%
NAD (enzymatic): ≤1%
AMP (enzymatic): ≤0.2%
Ethanol (GC): ≤4%
Reaction rates (Lactate dehydrogenase), based on standard:
Freshly dissolved sample: 95-105%
After 8 days incubation at +45°C: ≥95%
HPLC:
Freshly dissolved sample: ≥96.0 area%
After 8 days incubation at +45°C: ≥75 area%
A_{260}/A_{340}: ≤2.4
A_{260}/A_{240}: 1.57-2.17
Stability: At +2 to +8°C within specification range for 12 months.

NADP

disodium salt

Catalog number	Pack size
10 004 669 103	custom fill

Will be supplied as “b-NADP, Disodium Salt”. Unit of measure is “kg”.

For further processing only.

Cofactor for dehydrogenases, *e.g.,* glucose-6-phosphate dehydrogenase.

Application

Use NADP as a cofactor in a variety of diagnostic tests, such as for the determination of glucose and creatine kinase.

CAS: 53-59-8

Properties

Formula: $C_{21}H_{26}N_7O_{17}P_3Na_2$
Molecular weight: 787.4 D (NADP: 743.4 D)

Specification

Appearance: White to yellowish amorphous powder
Solubility: Clear, colorless to slightly yellowish solution in water (c=50 mg/mL), free of fuzz
NADP, Na-salt (from value found enzymatically, based on dry weight): ≥97%
NADP (enzymatic, A_{340}, ε=6.3 [L x $mmol^{-1}$ x cm^{-1}]): ≥85%
NADP (A_{260}, ε=18 [L x $mmol^{-1}$ x cm^{-1}]): ≥85%
Na (flame photometric): 4.5±0.5%
Water (K. Fischer): ≤6%
NAD (enzymatic): ≤0.5%
Methanol (GC): ≤2.9%
A_{360} (c=10 mg/mL water, against water): ≤0.600
A_{340} (c=0.01 mg/mL phosphate buffer, pH 7.0): ≤0.005
Stability: At +2 to +8°C within specification range for 24 months. Store dry.

NADP

monopotassium salt

Catalog number	Pack size
10 233 536 103	custom fill

Will be supplied as “b-NADP, Monopotassium Salt”. Unit of measure is “g”.

DRY ICE

For further processing only.

Cofactor for dehydrogenases, *e.g.,* glucose-6-phosphate dehydrogenase.

Application

Use NADP as a cofactor in a variety of diagnostic tests, such as for the determination of glucose and creatine kinase.

CAS: 53-59-8

Properties
Formula: $C_{21}H_{27}N_7O_{17}P_3K \times 2\ H_2O$
Molecular weight: 817.4 D (NADP: 743.4 D)

Specification
Appearance: White cristalline powder
NADP, K-salt (calculated from value determined enzymatically, based on dry weight): ≥97%
NADP (enzymatic, A_{340}, ε=6.3 [L x $mmol^{-1}$ x cm^{-1}]): ≥88%
NADP (A_{260}, ε=18 [L x $mmol^{-1}$ x cm^{-1}]): ≥88%
K (flame photometric): 4.0–5.0%
Water (K. Fischer): 4.5±1.0%
NAD (enzymatic): ≤0.2%
Methanol (GC): ≤2%
Mg (AAS): ≤40 ppm
A_{360} (c=10 mg/mL water, against water): ≤0.060
Stability: At -15 to -25°C within specification range for 12 months.

NADPH
tetrasodium salt

Cofactor for glutamate dehydrogenase.

Catalog number	Pack size
10 041 939 103	custom fill

Will be supplied as “b-NADPH, Reduced, Tetrasodium Salt”. Unit of measure is “g”.

For further processing only.

Application
Use NADPH as a cofactor in diagnostic tests for ammonia, urea and creatinine.

CAS: 53-57-6

Properties
Formula: $C_{21}H_{26}N_7O_{17}P_3Na_4$
Molecular weight: 833.4 D (NADPH: 745.4 D)

Specification
Appearance: White to slightly yellowish amorphous powder
Solubility: Clear, colorless to slightly yellowish solution in water (c=50 mg/mL)
Particle size (screen analysis according to Ph.Eur., US mesh <30): ≥95%
NADPH-Na_4 (calculated from content found enzymatically, based on dry weight): ≥97%
NADPH (enzymatic, A_{340}): ≥79%
NADPH (A_{340}, ε=6.3 [L x $mmol^{-1}$ x cm^{-1}]): ≥79%
NADPH (A_{260}, ε=15 [L x $mmol^{-1}$ x cm^{-1}]): ≥80%
NADPH (HPLC): ≥95 area%
Na (flame photometric): 10–12%

Water (K. Fischer): ≤6%
NADH (HPLC): ≤0.5 area%
NADP (HPLC): ≤0.5 area%
Nicotinic acid amide (HPLC): ≤2 area%
NADP (enzymatic): ≤0.5%
Ethanol (GC): ≤3%
A_{260}/A_{340}: 2.32-2.65
Stability: At +2 to +8°C within specification range for 12 months.

Thio-NAD

free acid

NAD analog with an absorbance maximum of thio-NADH at 405 nm.

Application

Use Thio-NAD instead of NAD in enzymatic reactions to measure the reaction kinetics at 405 nm, *e.g.,* kinetic enzyme cycling methods using Thio-NAD and NADH.

CAS: 4090-29-3

Properties

Formula: $C_{21}H_{27}N_7O_{13}SP_2$
Molecular weight: 679.5 D

Specification

Appearance: Yellowish powder
Solubility: Clear, colorless to slightly yellowish solution in water (c=37 mg/mL)
Thio-NAD (A_{259}, ε=19.7 [L x $mmol^{-1}$ x cm^{-1}]): ≥95%
Water (K. Fischer): ≤4%
A_{398}/A_{340} (against water) : ≤0.124
A_{236}/A_{259} (against water) : 0.640-0.670
A_{296}/A_{259} (against water) : 0.244-0.264
Revision of absorption in presence of 0.4 mmol/L NADH: ≤0.001 abs/min
Ca (AAS): No limit
Mg (AAS): No limit
Stability: At -15 to -25°C within specification range for 12 months.

Catalog number	Pack size
04 635 396 103	custom fill

Will be supplied as “Thio-NAD free acid”. Unit of measure is “g”.

DRY ICE

For further processing only.

Adenosine-5'-O-(2-thiodiphosphate)

trilithium salt

Catalog number	Pack size
10 200 166 103	custom fill

Will be supplied as "Adenosine-5'-O-(2-thiodiphosphate) Tri-Li". Unit of measure is "g".

DRY ICE

For further processing only.

Non-hydrolyzable ADP analog.

Application

Use Adenosine-5'-O-(2-thiodiphosphate) to inhibit ADP-binding enzymes.

CAS: 73536-95-5

Properties

Formula: $C_{10}H_{12}N_5O_9P_2SLi_3$
Molecular weight: 461.0 D (ATP-β-S: 443.2 D)

Specification

Appearance: White powder
ATP-β-S, Li_3(A_{260}): ≥81%
ATP-β-S (A_{260}, ε= 15.0 [L x $mmol^{-1}$ x cm^{-1}]): ≥78%
ATP-β-S (HPLC): ≥90 area%
Water (K. Fischer): ≤12%
ATP (HPLC): ≤5 area%
ADP (HPLC): ≤1 area%
AMP (HPLC): ≤4 area%
A_{250}/A_{260}: 0.75-0.83
A_{280}/A_{260}: 0.14-0.18
A_{290}/A_{260}: 0.00-0.01
Stability: At -15 to -25°C within specification range for 12 months.

Adenosine-5'-O-(3-thiotriphosphate)

tetralithium salt

Catalog number	Pack size
10 122 734 103	custom fill

Will be supplied as "Adenosine-5'-O-(3-thiotriphosphate), Li4". Unit of measure is "g".

DRY ICE

For further processing only.

Non-hydrolyzable ATP analog.

Application

Use Adenosine-5'-O-(3-thiotriphosphate) to inhibit ATP-binding enzymes.

CAS: 35094-45-2

Properties

Formula: $C_{10}H_{12}N_5O_{12}P_3SLi_4$
Molecular weight: 547.0 D (ATP-γ-S: 523.2 g/mol)

Specification

Appearance: White powder
ATP-γ-S, Li_4 (A_{260}): ≥78%
ATP-γ-S (A_{260}, ε=15.0 [L x $mmol^{-1}$ x cm^{-1}]): ≥74%
ATP-γ-S (HPLC): ≥85 area%
Li (flame photometric): 3-5%
Water (K. Fischer): ≤12%
ADP (HPLC): ≤12 area%
AMP (HPLC): ≤3 area%
A_{250}/A_{260}: 0.79±0.02
A_{280}/A_{260}: 0.16±0.01
A_{290}/A_{260}: ≤0.05
Stability: At -15 to -25°C within specification range for 6 months.
Protect from light. Store dry.

ADP

potassium salt

Cofactor for diagnostic tests.

Application

Use ADP in variety of diagnostic tests, such as for the determination of creatine kinase and pyruvate kinase. Use it also for the activation of glutamate dehydrogenase in the determination of for example urea or ammonia.

CAS: 58-64-0

Properties

Formula: $C_{10}H_{14}N_5O_{10}P_2K$ x 2 H_2O
Molecular weight: 501.3 D (ADP: 427.2 D)
Remark: Crystalline ADP-K x 2 H_2O is the purest and most stable form of ADP available.

Specification

Appearance: Colorless crystals
Solubility: Clear, colorless solution in water (c=50 mg/mL)
ADP-K x 2 H_2O (based on value found enzymatically): ≥98%
ADP (enzymatic): ≥84%
ADP (A_{260}, ε= 15 [L x $mmol^{-1}$ x cm^{-1}]): ≥84%
K (flame photometric): 7.8±0.5%
Water (K. Fischer): 7.2±1%
P_i (Fiske and Subbarow): ≤0.3%
AMP (enzymatic): ≤1%
ATP (enzymatic): ≤0.2%
NH_4 (enzymatic): ≤0.005%

Catalog number	Pack size
10 233 528 103	custom fill

Will be supplied as “Adenosine-5’-diphosphate (ADP), K-Salt”. Unit of measure is “kg”.

For further processing only.

A_{250}/A_{260}: 0.78±0.02
A_{280}/A_{260}: 0.16±0.01
A_{290}/A_{260}: ≤0.01
Stability: At +2 to +8°C within specification range for 24 months.
Store dry.

ADP

disodium salt

Cofactor for diagnostic tests.

Catalog number	Pack size
10 129 062 103	custom fill

Will be supplied as “ADP, Di-Na”. Unit of measure is “kg”.

For further processing only.

Application

Use ADP in variety of diagnostic tests, such as for the determination of creatine kinase and pyruvate kinase. Use it also for the activation of glutamate dehydrogenase in the determination of for example urea or ammonia.

CAS: 58-64-0

Properties

Formula: $C_{10}H_{13}N_5O_{10}P_2Na_2$
Molecular weight: 471.2 D (ADP: 427.2 D)
Remark: ATP and AMP may form during storage.

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in water (c=50 mg/mL)
ADP-Na-salt (calculated on value found enzymatically): ≥90%
ADP (enzymatic): ≥82%
ADP (A_{260}, ε= 15 [L x $mmol^{-1}$ x cm^{-1}]): ≥82%
Na (flame photometric): 9±1%
Water (K. Fischer): ≤7%
P_i (Fiske and Subbarow): ≤0.6%
AMP (enzymatic): ≤3%
ATP (enzymatic): ≤1%
NH_4 (enzymatic): ≤0.01%
A_{250}/A_{260}: 0.76-0.80
A_{280}/A_{260}: 0.15-0.17
A_{290}/A_{260}: ≤0.01
Stability: At -15 to -25°C within specification range for 6 months.

ADP for potassium test

free acid

Catalog number	Pack size
11 333 879 103	custom fill

Will be supplied as “ADP Free Acid for Potassium Test”. Unit of measure is “kg”.

DRY ICE

For further processing only.

Application

Use ADP for potassium testing as an activator for glutamate dehydrogenase in enzymatic potassium tests.

CAS: 58-64-0

Properties

Formula: $C_{10}H_{15}N_5O_{10}P_2$
Molecular weight: 427.2 D
Remark: ATP and AMP may form during storage.

Specification

Appearance: White crystallizate
Solubility: Clear, colorless solution in NaOH, 0.1 mol/L (c=50 mg/mL)
IR-spectrum (KBr-pellet): Corresponds to reference
ADP (enzymatic): ≥97%
ADP (A_{260}, ε= 15 [L x $mmol^{-1}$ x cm^{-1}]): ≥97%
Water (K. Fischer): ≤2%
P_i (Fiske and Subbarow): ≤0.6%
AMP (enzymatic): ≤3%
ATP (enzymatic, HK/G6P-DH): ≤0.3%
Na (AAS): ≤750 ppm
K (AAS): ≤20 ppm
NH_4 (enzymatic): ≤0.01%
A_{250}/A_{260}: 0.78±0.02
A_{280}/A_{260}: 0.16±0.01
A_{290}/A_{260}: ≤0.01
Stability: At -15 to -25°C within specification range for 12 months.

AMP

free acid

Catalog number	Pack size
10 000 086 103	custom fill

Will be supplied as “Adenosine-5’-monophosphoric Acid (AMP)”. Unit of measure is “kg”.

For further processing only.

Nucleotide for diagnostic tests.

Application

Use AMP for the determination of 5’-nucleotidase and in diagnostic tests for the determination of creatine kinase.

CAS: 61-19-8

Properties

Formula: $C_{10}H_{14}N_5O_7P \times H_2O$
Molecular weight: 365.2 D (AMP: 347.2 D)

Specification

Appearance: White, crystalline powder
Solubility: Clear, colorless solution in NaOH, 1 mol/L (c=50 mg/mL)
AMP x H_2O (based on value found enzymatically): ≥98%
AMP (enzymatic): ≥93%
AMP (A_{260}, ε=15.0 [L x $mmol^{-1}$ x cm^{-1}]): ≥93%
Water (K. Fischer): 5±2%
P_i: ≤0.3%
Fe (bathophenanthrolin): ≤10 ppm
Heavy metals (as Pb): ≤10 ppm
A_{250}/A_{260}: 0.78±0.02
A_{280}/A_{260}: 0.15±0.01
A_{290}/A_{260}: ≤0.01
Stability: At +15 to +25°C within specification range for 36 months.

AMP

disodium salt

Nucleotide for diagnostic tests.

Application

Use AMP for the determination of 5'-nucleotidase and in diagnostic tests for the determination of creatine kinase.

CAS: 61-19-8

Properties

Formula: $C_{10}H_{12}N_5O_7PNa_2$
Molecular weight: 391.2 D (AMP: 347.2 D)

Specification

Appearance: White crystals
Solubility: Clear, colorless solution in water (c=50 mg/mL)
Water (K. Fischer): ≤12%
P_i: ≤0.3%
A_{250}/A_{260}: 0.76-0.80
A_{280}/A_{260}: 0.15-0.17
A_{290}/A_{260}: ≤0.01
Stability: At +15 to +25°C within specification range for 36 months.

Catalog number	Pack size
10 000 094 103	custom fill

Will be supplied as "Adenosine-5'-monophosphate (AMP), Di-Na". Unit of measure is "kg".

For further processing only.

ATP, Grade I

disodium salt

Catalog number	Pack size
10 422 495 103	custom fill

Will be supplied as “ATP, Di-Na, Special Quality”. Unit of measure is “kg”.

For further processing only.

Cofactor for kinases, *e.g.* glycerokinase and hexokinase.

Application

Use ATP, Grade I, in a variety of diagnostic tests, such as for the determination of triglycerides, creatine kinase and glucose.

CAS: 56-65-5

Properties

Formula: $C_{10}H_{14}N_5O_{13}P_3Na_2$ x 3 H_2O
Molecular weight: 605.2 D (ATP: 507.2 D)

Specification

Appearance: White crystals
Solubility: Clear, colorless solution in water (c=50 mg/mL)
ATP-Na_2H_2 x 3 H_2O (based on value found enzymatically): ≥99%
ATP (enzymatic): ≥84%
ATP (A_{260}, ε=15.0 [L x $mmol^{-1}$ x cm^{-1}]): ≥84%
Na (flame photometric): 7.5±0.5%
Water (K. Fischer): ≤8±1%
P_i: ≤0.15%
ADP, AMP (enzymatic): ≤0.5%
GTP (HPLC): ≤0.01 area%
Fe (AAS): ≤10 ppm
Mg (AAS): ≤10 ppm
Ca (AAS): ≤20 ppm
Zn (AAS): ≤5 ppm
V (AAS): ≤1 ppm
A_{250}/A_{260}: 0.79±0.02
A_{280}/A_{260}: 0.15±0.01
A_{290}/A_{260}: ≤0.01
Stability: At +2 to +8°C within specification range for 24 months.

ATP, Grade II

disodium salt

Catalog number	Pack size
10 000 116 103	custom fill

Will be supplied as ‘’Adenosine-5’-triphosphate (ATP), Di-Na’’. Unit of measure is ‘’kg’’.

For further processing only.

Cofactor for kinases, *e.g.* glycerokinase and hexokinase.

Application

Use ATP, Grade II in a variety of diagnostic tests, such as for the determination of triglycerides and glucose.

CAS: 51963-61-2

Properties
Formula: $C_{10}H_{14}N_5O_{13}P_3Na_2$ x 3 H_2O
Molecular weight: 605.2 D (ATP: 507.2 D)

Specification
Appearance: White crystals
Solubility: Clear, colorless solution in water (c=50 mg/mL)
ATP-Na_2H_2 x 3 H_2O (based on value found enzymatically): ≥98%
ATP (enzymatic): ≥82%
ATP (A_{260}, ε=15.0 [L x $mmol^{-1}$ x cm^{-1}]): ≥82%
Na (flame photometric): 7.5±0.5%
Water (K. Fischer): ≤10%
P_i: ≤0.3%
ADP, AMP (enzymatic): ≤0.5%
GTP (HPLC): ≤0.01 area%
Fe (AAS): ≤15 ppm
Heavy metals (as Pb): ≤30 ppm
A_{250}/A_{260}: 0.79±0.02
A_{280}/A_{260}: 0.15±0.01
A_{290}/A_{260}: ≤0.01
Stability: At +2 to +8°C within specification range for 24 months.

Guanosine-5'-O-(2-thiodiphosphate)
trilithium salt

Non-hydrolyzable GDP analog.

Application
Use Guanosine-5'-O-(2-thiodiphosphate) to completely inhibit G protein activation by GTP and GTP analogs.

CAS: 71376-97-1

Properties
Formula: $C_{10}H_{12}N_5O_{10}P_2SLi_3$
Molecular weight: 477.0 D (GDP-β-S: 459.3 D)

Specification
Appearance: White powder
GDP-β-S (HPLC): ≥85 area%
Li (flame photometric): 4±1%
Water (K. Fischer): ≤12%
GMP (HPLC): ≤10 area%
Stability: At -15 to -25°C within specification range for 12 months.

Catalog number	Pack size
10 526 134 103	custom fill

Will be supplied as "Guanosine-5'-O-(2-thiodiphosphate) Tri-Li". Unit of measure is "g".

DRY ICE

For further processing only.

Enzymes

Colorimetric Tests

*Indicator reaction

H_2O_2 + indicator $\xrightarrow{\text{peroxidase}}$ dye + H_2O

Alkaline phosphatase (ALP)

4-nitrophenyl phosphate (colorless) $\xrightarrow{\text{ALP}}$ 4-nitrophenol (yellow)

Cholesterol

cholesterol ester + H_2O $\xrightarrow{\text{cholesterol esterase}}$ cholesterol + FFA

cholesterol ester + O_2 $\xrightarrow{\text{cholesterol oxidase}}$ cholestone + $H_2O_2^*$

α-Amylase

5 ethylidene-G_7pNP (EPS) + 5 H_2O $\xrightarrow{\text{α-amylase}}$ ethylidene-G_3 + pNP-G_4 +

2 ethylidene-G_4 + 2 pNP-G_3 + 2 ethylidene-G_5 + 2 pNP-G_2

Creatinine

creatinine + H_2O $\xrightarrow{\text{creatininase}}$ creatine

creatine + H_2O $\xrightarrow{\text{creatinase}}$ sarcosine + urea

sarcosine O_2 + H_2O $\xrightarrow{\text{sarcosine oxidase}}$ glycine formaldehyde + $H_2O_2^*$

removal of ascorbate: 2 l-ascorbate O_2 + H_2O $\xrightarrow{\text{ascorbate oxidase}}$ 2 l-dehydroascorbic acid + 2 H_2O

Glucose

(α-d-glucose $\xrightarrow{\text{mutarotase}}$ β-d-glucose)

β-d-glucose + O_2 + H_2O $\xrightarrow{\text{glucose oxidase}}$ gluconolactone + H_2O_2*

γ-Glutamyltransferase

glupa-carboxylate (donor) + glycylglycine (acceptor)

$\xrightarrow{\text{γ-glutamyltransferase}}$ p-nitroaniline (yellow) + γ-glutamylglycylglycine

Lactate

l–lactate $\xrightarrow{\text{lactate oxidas}}$ pyruvate + H_2O_2*

Lipase

chromogenic substrate for lipase $\xrightarrow{\text{lipase}}$ glutaric acid-(6-methylreso) ester

glutaric acid-(6-methylresorufin) ester $\xrightarrow{\text{spontaneous}}$ glutaric acid + methylresorufin (red)

Triglycerides

triglycerides + 3 H_2O $\xrightarrow{\text{lipoprotein lipase}}$ glycerol 3 fatty acids

glycerol + ATP $\xrightarrow{\text{glycerokinase}}$ glycerol-3-phosphate + ADP

glycerol-3-phosphate + O_2 $\xrightarrow{\text{glycerol-3-phosphate oxidase}}$ dihydroxyacetone H_2O_2*

Uric acid

uric acid + 2 H_2O + O_2 —(uricase)→ allantoin CO_2 + H_2O_2*

removal of ascorbate: 2 l-ascorbate + O_2H_2O —(ascorbate oxidase)→ 2 l-dehydroascorbic acid + 2 H_2O

UV Tests

Alanine aminotransferase (ALT)

l-alanine + α-ketoglutarate —(AST)→ pyruvate + l-glutamate

pyruvate + NADH + $H^{\oplus}$ —(lactate dehydrogenase)→ l-lactate + $NAD^{\oplus}$

Aspartate aminotransferase (AST)

l-alanine + α-ketoglutarate —(AST)→ oxaloacetate + l-glutamate

oxaloacetate + NADH + $H^{\oplus}$ —(malate dehydrogenase)→ l-malate + $NAD^{\oplus}$

Creatine kinase

creatine phosphate + ADP —(creatine kinase)→ creatine + ATP

ATP + glucose —(hexokinase)→ glucose-6-phosphate + ADP

glucose-6-phosphate + $NADP^{\oplus}$ —(G6PDH)→ 6-phosphogluconate + NADPH + $H^{\oplus}$

Ethanol

ethyl alcohol + $NAD^{\oplus}$ —(alcohol dehydrogenase)→ acetaldehyde + NADH + $H^{\oplus}$

Glucose

glucose + ATP —(hexokinase)→ glucose-6-phosphate + ADP

glucose-6-phosphate + NADP —(G6PDH)→ 6-phosphogluconate + NADPH + $H^{\oplus}$

Lactate dehydrogenase

l-lactate + $NAD^{\oplus}$ —(lactate dehydrogenase)→ pyruvate + NADH + $H^{\oplus}$

Urea

urea $2H_2O$ —(urease)→ $2\ NH^{4+} + CO_3^{2-}$

NH^{6+} + α-ketoglutarate + NADH —(GLDH)→ l-glutamate + $NAD^{\oplus}$ + H_2O

Acetate-CoA Ligase (Acetyl-CoA Synthetase)

from yeast, lyophilizate

Catalog number	Pack size
10 128 180 103	custom fill

Will be supplied as ''Acetyl-CoA Synthetase from Yeast''. Unit of measure is ''kU''.

For further processing only.

Ligase that catalyzes the synthesis of acetyl-CoA from acetate and coenzyme A.

Application

Use Acetate-CoA Ligase (Acetyl-CoA Synthetase) in diagnostic tests for the determination of acetic acid in combination with Citrate Synthase, Catalog No. 10 153 605 103 and Malate Dehydrogenase, Catalog No. 10 200 387 103

EC 6.2.1.1

Specification

Appearance: White lyophilizate
pH value (c=20 mg/mL in water): 6.8-7.8
Specific activity (+37°C, acetate): ≥4 U/mg protein
Protein (Biuret): ≤0.25 mg/mg lyophilizate
Acetate (enzymatic): ≤0.1%
Stability: At +2 to +8°C within specification range for 18 months. Store dry.

Acyl-CoA Synthetase (Long-Chain-Fatty-Acid-CoA Ligase)

from microorganism, lyophilizate

Catalog number	Pack size
10 885 568 103	custom fill

Will be supplied as "Acyl-CoA-Synthetase, Lyo.". Unit of measure is "kU".

DRY ICE

For further processing only.

Synthetase that catalyzes the synthesis of acyl-CoA from a long-chain carboxylic acid and coenzyme A.

Application

Use Acyl-CoA Synthetase in diagnostic tests for the determination of free fatty acids in combination with Acyl-CoA Oxidase, Catalog No. 10 885 550 103.

EC 6.2.1.3

Specification

Appearance: White lyophilizate
Activity (+37°C, enzymatic): ≥1.5 U/mg lyophilizate
Specific Activity (+37°C, enzymatic): ≥1.5 U/mg protein
Absorbance of the solution (2 U/mL):
A_{400}: ≤0.05
A_{500}:≤0.025
A_{650}: ≤0.012

Contaminants:
Lipase (indirect): -15% bis +15%
Stability: At -15 to -25 °C within specification range for 12 months.
Store dry in tightly sealed containers.

Acid Phosphatase

from potato, lyophilizate

Catalog number	Pack size
10 154 393 103	custom fill

Will be supplied as “Phosphatase, Acid, Grade II from Potato”. Unit of measure is “kU”.

For further processing only.

Application

Use Acid Phosphatase in your controls or calibrators.

EC 3.1.3.2

Specification

Appearance: Pale brown lyophilizate
Activity (+25°C, 4-nitrophenyl phosphate): ≥2 U/mg lyophilizate
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

Acyl-CoA Oxidase

from microorganisms, lyophilizate

Catalog number	Pack size
10 885 550 103	custom fill

Will be supplied as “Acyl-CoA-Oxidase, Lyo.”. Unit of measure is “kU”.

DRY ICE

For further processing only.

Oxidoreductase that catalyzes the interconversion of acyl-CoA to trans-2,3-dehydroacyl-CoA.

Application

Use Acyl-CoA Oxidase in diagnostic tests for the determination of free fatty acids in combination with Acetate-CoA Ligase (Acetyl-CoA Synthetase), Catalog Nos. 10 885 568 103 or 10 128 180 103.

EC 1.3.3.6

Specification

Appearance: Yellowish lyophilizate powder
Activity (+37°C, enzymatic): ≥20 U/mg lyophilizate
Specific activity (enzymatic): ≥20 U/mg protein
Absorbance of the solution (20 U/mL):
A_{400}: ≤0.08
A_{500}: ≤0.04
A_{650}: ≤0.02
Contaminants:
Catalase: ≤12 U/U Acyl-CoA oxidase
Stability: At -15 to -25 °C within specification range for 12 months.

Alanine Aminotransferase (ALT) (GPT)

from pig heart, lyophilizate

Catalog number	Pack size
10 170 674 103	custom fill

Will be supplied as “GPT from Pig Heart”. Unit of measure is “kU”.

For further processing only.

Application

Use Alanine Aminotransferase for designing your calibrator/control reagent and for the synthesis of unnatural L-amino acids from α-keto acids.

EC 2.6.1.2

Specification

Appearance: White to yellowish lyophilizate
pH value (c=10 mg/mL in water): 7.0–8.0
Activity (+25°C, L-alanine, α-oxoglutarate): ≥3 U/mg lyophilizate
Activity (+37°C, ALT (ALAT/GPT)-kit): ≥4.8 U/mg lyophilizate
Contaminants (expressed as percentage of Alanine aminotransferase activity):
Contaminating oxidases (FOX): ≤0.7
Glutamate dehydrogenase: ≤0.01
Aspartate aminotransferase (AST/GOT): ≤0.135
Lactate dehydrogenase: ≤0.01
Malate dehydrogenase: ≤0.01
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 12 months. Store dry.

Alanine Aminotransferase (ALT) (GPT)

from pig heart, suspension

Catalog number	Pack size
10 153 443 103	custom fill

Will be supplied as “GPT from Pig Heart”. Unit of measure is “kU”.

For further processing only.

Application

Use Alanine Aminotransferase for designing your calibrator/control reagent and for the synthesis of unnatural L-amino acids from α-keto acids.

EC 2.6.1.2

Specification

Appearance: Slightly yellow suspension in ammonium sulfate, 3.2 mol/L
pH value: 5.5–6.5
Specific activity (+25 °C; L-alanine, α-ketoglutarate): ≥80 U/mg protein
Protein (Biuret): ≥10 mg/mL (standardized to 10±1 mg/mL)
Ammonium sulfate: 3.2±0.2 mol/L
Contaminants (expressed as percentage of Alanine Aminotransferase

activity):
Glutamate dehydrogenase: ≤0.01
Aspartate aminotransferase (AST/GOT) : ≤0.03
Lactate dehydrogenase: ≤0.01
Malate dehydrogenase: ≤0.01
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 12 months.

Alcohol Dehydrogenase

from yeast, lyophilizate

Dehydrogenase that catalyzes the interconversion of alcohols to the corresponding aldehydes.

Application

Use Alcohol Dehydrogenase in diagnostic tests for the determination of alcohol or aldehyde (formate).

EC 1.1.1.1

Properties

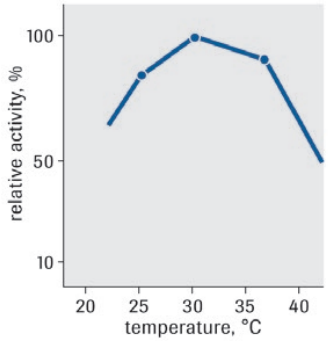
Nomenclature: Alcohol:NAD^+ oxidoreductase
Molecular weight: 141 kD (pH 7.0)
Isoelectric point: 5.4–5.8
Michaelis constants (Phosphate buffer, pH 7.15, +25°C):
Ethanol: 1.3 x 10^{-2} mol/L
NAD: 7.4 x 10^{-5} mol/L
Acetaldehyde: 7.8 x 10^{-4} mol/L
NADH: 1.1 x 10^{-5} mol/L
Inhibitor constants (Phosphate buffer, pH 7.15, +25°C):
Ethanol: 4.3 x 10^{-2} mol/L
NAD: 6.1 x 10^{-4} mol/L
Acetaldehyde: 6.7 x 10^{-4} mol/L
NADH: 1.8 x 10^{-5} mol/L
Inhibitors:
-SH-reagents and heavy metals, such as derivatives, 4-chloromercuribenzoate, iodoacetic acid, N-substituted maleinimides, Hg^{2+}, Ag^+ and Cu^{2+}.
-Complexing agents, *e.g.,* o- phenanthroline, EDTA, oxalate.
-NAD analogs and NAD partial structures, *e.g.,* NADP, NADH, ADP, ADP-ribose.
-Substances, which react with enzyme bound NAD, *e.g.,* sulfite, hydroxylamine, cyanide.
-Substrate analogs, *e.g.,* fluoroethanol.
-Oxidizers, *e.g.,* H_2O_2 and aerial oxygen inactivate by oxidation of

Catalog number	Pack size
11 452 541 103	custom fill

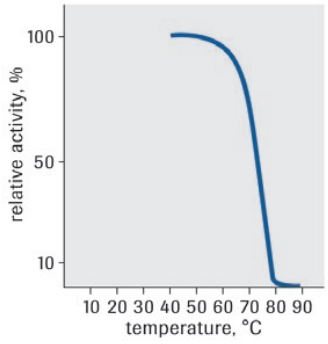
Will be supplied as “Alcohol Dehydrogenase, Yeast”. Unit of measure is “MU”.

DRY ICE

For further processing only.



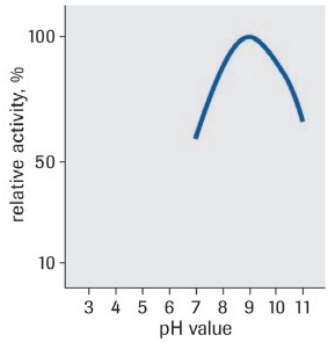
Temperature dependence



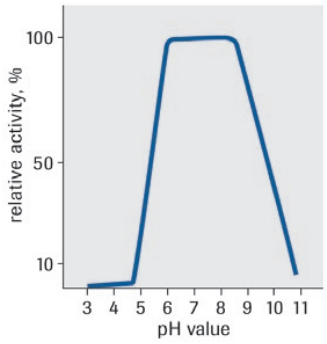
Incubation:
10 min
$(NH_4)_2SO_4$, 3.2 mol/l;
pH 6.0
18 090 U ADH/ml

Thermal stability

essential groups.
pH optimum: 9.0 (see figure)
Temperature dependence: See figure
pH stability: 6.0–8.0 (see figure)
Thermal stability: Up to +50°C (see figure)
Specificity: Alcohol dehydrogenase oxidizes primary alcohols. Isopropanol and secondary butanol are slowly oxidized, while higher secondary and tertiary alcohols do not react. Numerous aldehydes are reduced in the reverse reaction. The enzyme does not react with NADP.
Remarks:Alcohol dehydrogenase tends to show turbidity in solution at +37°C storage. Modified Alcohol dehydrogenase shows no turbidity for at least 4 weeks in solution at +37°C.



pH optimum



Incubation:
25°C, 120 min
pH 3.0 – 5.0:
citrate buffer, 0.2 mol/l
pH 6.0 – 8.0:
phosphate buffer,
0.2 mol/l
pH 9.0 –11.0:
glycine buffer, 0.2 mol/l
180 U ADH/ml

pH stability

Specification

Appearance: White lyophilizate (50 mg lyophilizate contain approximately 30 mg enzyme protein,15 mg sucrose, 5 mg phosphate)
pH value (c=50 mg/mL in water): 7.0–8.0
Activity (+25°C, ethanol): No limit
Specific activity: ≥400 U/mg (protein)
Protein (Biuret): ≥0.5 mg/mg lyophilizate
Contaminants (expressed as percentage of Alcohol Dehydrogenase activity):
Lactate dehydrogenase: ≤0.01
Malate dehydrogenase ≤0.01
Stability: At -15 to -25°C within specification range for 12 months. Store dry.

Alcohol Dehydrogenase, chemically modified

from yeast, lyophilizate

Dehydrogenase that catalyzes the interconversion of alcohols to the corresponding aldehydes.

Application

Use Alcohol Dehydrogenase in diagnostic tests for the determination of alcohol or aldehyde (formate).

EC 1.1.1.1

Properties

Nomenclature: Alcohol:NAD^+ oxidoreductase
Molecular weight: 141 kD (pH 7.0)
Isoelectric point: 5.4–5.8
Michaelis constants (Phosphate buffer, pH 7.15, +25°C):
Ethanol: 1.3 x 10^{-2} mol/L

Catalog number	Pack size
11 644 980 103	custom fill

Will be supplied as “Alcohol Dehydrogenase, Yeast, Modified”. Unit of measure is “MU”.

For further processing only.

NAD: 7.4 x 10^{-5} mol/L
Acetaldehyde: 7.8 x 10^{-4} mol/L
NADH: 1.1 x 10^{-5} mol/L
Inhibitor constants (Phosphate buffer, pH 7.15, +25°C):
Ethanol: 4.3 x 10^{-2} mol/L
NAD: 6.1 x 10^{-4} mol/L
Acetaldehyde: 6.7 x 10^{-4} mol/L
NADH: 1.8 x 10^{-5} mol/L
Inhibitors:
-SH-reagents and heavy metals, such as derivatives, 4-chloromercuribenzoate, iodoacetic acid, N-substituted maleinimides, Hg^{2+}, Ag^{+} and Cu^{2+}.
-Complexing agents, *e.g.,* o- phenanthroline, EDTA, oxalate.
-NAD analogs and NAD partial structures, *e.g.,* NADP, NADH, ADP, ADP-ribose.
-Substances, which react with enzyme bound NAD, *e.g.,* sulfite, hydroxylamine, cyanide.
-Substrate analogs, *e.g.,* fluoroethanol.
-Oxidizers, *e.g.,* H_2O_2 and aerial oxygen inactivate by oxidation of essential groups.
pH optimum: 9.0 (see figure for product Cat. No. 11 452 541 103)
Temperature dependence: See figure for product Cat. No. 11 452 541 103
pH stability: 6.0-8.0 (see figure for product Cat. No. 11 452 541 103)
Thermal stability: Up to +50°C (see figure for product Cat. No. 11 452 541 103)
Specificity: Alcohol dehydrogenase oxidizes primary alcohols. Isopropanol and secondary butanol are slowly oxidized, while higher secondary and tertiary alcohols do not react. Numerous aldehydes are reduced in the reverse reaction. The enzyme does not react with NADP.

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in water (c = 50 mg/mL)
pH value: 6.5-8.0
Activity (+25°C, ethanol): ≥25 U/mg lyophilizate
Contaminants (expressed as percentage of Alcohol Dehydrogenase activity):
Lactate dehydrogenase: ≤0.01
Malate dehydrogenase:≤0.01
Stability: At +2 to +8°C within specification range for 12 months.

Alcohol Dehydrogenase

from yeast, suspension

Catalog number	Pack size
11 531 034 103	custom fill

Will be supplied as “ADH-Y, As, new”. Unit of measure is “g”.

For further processing only.

Dehydrogenase that catalyzes the interconversion of alcohols to the corresponding aldehydes.

Application

Use Alcohol Dehydrogenase in diagnostic tests for the determination of alcohol or aldehyde (formate).

EC 1.1.1.1

Properties

Nomenclature: Alcohol:NAD^+ oxidoreductase
Molecular weight: 141 kD (pH 7.0)
Isoelectric point: 5.4-5.8
Michaelis constants (Phosphate buffer, pH 7.15, +25°C):
Ethanol: 1.3 x 10^{-2} mol/L
NAD: 7.4 x 10^{-5} mol/L
Acetaldehyde: 7.8 x 10^{-4} mol/L
NADH: 1.1 x 10^{-5} mol/L
Inhibitor constants (Phosphate buffer, pH 7.15, +25°C):
Ethanol: 4.3 x 10^{-2} mol/L
NAD: 6.1 x 10^{-4} mol/L
Acetaldehyde: 6.7 x 10^{-4} mol/L
NADH: 1.8 x 10^{-5} mol/L
Inhibitors:
-SH-reagents and heavy metals, such as derivatives, 4-chloromercuribenzoate, iodoacetic acid, N-substituted maleinimides, Hg^{2+}, Ag^+ and Cu^{2+}.
-Complexing agents, *e.g.,* o- phenanthroline, EDTA, oxalate.
-NAD analogs and NAD partial structures, *e.g.,* NADP, NADH, ADP, ADP-ribose.
-Substances, which react with enzyme bound NAD, *e.g.,* sulfite, hydroxylamine, cyanide.
-Substrate analogs, *e.g.,* fluoroethanol.
-Oxidizers, *e.g.,* H_2O_2 and aerial oxygen inactivate by oxidation of essential groups.
pH optimum: 9.0 (see figure for product Cat. No. 11 452 541 103)
Temperature dependence: See figure for product Cat. No. 11 452 541 103
pH stability: 6.0-8.0 (see figure for product Cat. No. 11 452 541 103)
Thermal stability: Up to +50°C (see figure for product Cat. No. 11 452 541 103)
Specificity: Alcohol dehydrogenase oxidizes primary alcohols. Isopropanol and secondary butanol are slowly oxidized, while higher secondary and tertiary alcohols do not react. Numerous aldehydes are reduced in the reverse reaction. The enzyme does not react with NADP.

Remark: Alcohol dehydrogenase tends to show turbidity in solution at +37°C storage.
Modified Alcohol dehydrogenase shows no turbidity for at least 4 weeks in solution at +37°C.

Specification

Appearance: White to yellow-brown crystalline suspension in ammonium sulfate solution, 3.2 mol/L, pH approximately 6.5
pH value: 6.0–7.0
Activity: 9000 to 18000 U/mL
Specific activity (+25°C, ethanol): ≥300 U/mg (protein)
Protein (Biuret): 30±3 mg/mL lyophilizate
Contaminants (expressed as percentage of Alcohol Dehydrogenase activity):
Lactate dehydrogenase: ≤0.01
Malate dehydrogenase: ≤0.01
Stability: At +2 to +8°C within specification range for 9 months. Store under nitrogen.

Aldehyde Dehydrogenase

from yeast, lyophilizate

Catalog number	Pack size
10 145 947 103	custom fill

Will be supplied as ''Aldehyde Dehydrogenase from Yeast''. Unit of measure is ''kU''.

For further processing only.

Dehydrogenase that catalyzes the oxidation of aldehydes using $NAD(P)^+$ as acceptor.

Application

Use Aldehyde Dehydrogenase in diagnostic tests that use an NADH/NADPH recycling system.

EC 1.2.1.5

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in water (c=20 mg/mL)
Activity (+25°C, acetaldehyde): ≥2.0 U/mg lyophilizate
Specific activity: ≥20 U/mg protein
Protein (Biuret): No limit (approximately 10%)
Contaminants (expressed as percentage of Aldehyde Dehydrogenase activity):
Alcohol dehydrogenase: ≤0.01
Lactate dehydrogenase: ≤0.01
''NADH oxidase'': ≤0.01
''NADPH oxidase'': ≤0.01
Stability: At +2 to +8°C within specification range for 12 months. Store dry. Store under nitrogen.

Aldose 1-Epimerase (Mutarotase)

from pig kidney, suspension

Catalog number	Pack size
10 152 331 103	custom fill

Will be supplied as ''Mutarotase from Hog Kidney''. Unit of measure is ''MU''.

For further processing only.

Enzyme for mutarotation of sugars.

Application

Use Aldose 1-Epimerase (Mutarotase) in diagnostic tests for the determination of glucose anomers.

EC 5.1.3.3

Specification

Appearance: White suspension in ammonium sulfate, 3.2 mol/L, pH approximately 6
pH value: 5.5-6.5
Specific activity (+25°C, α-D-glucose): ≥5,000 U/mg protein
Protein (Biuret): 5±0.5 mg/mL
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 12 months.

Ascorbate Oxidase

from *Cucurbita* species, lyophilizate

Catalog number	Pack size
10 199 605 103	custom fill

Will be supplied as ''Ascorbate Oxidase from *Cucurbita* species''. Unit of measure is ''kU''.

DRY ICE

For further processing only.

Oxidoreductase that oxidizes ascorbic acid to dehydroascorbate.

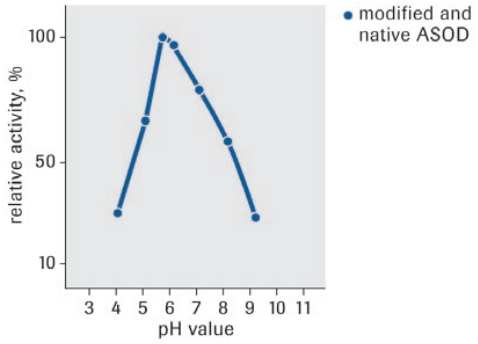
Application

Use Ascorbate Oxidase in a variety of diagnostic tests to eliminate the interference of ascorbic acid, since ascorbic acid interferes with the Trinder reaction that is widely used for the colorimetric determination of analytes. It is useful in liquid as well as dry chemistry test, *e.g.,* for the determination of uric acid, lactate or creatinine.

EC 1.10.3.3

Properties

Nomenclature: L-ascorbate:oxygen oxidoreductase
Molecular weight: Approximately 140 kD
Isoelectric point: 5.0-6.0
Michaelis constant (Phosphate buffer, pH 5.6, +25°C):
L-ascorbate: 3 x 10^{-4} mol/L
Inhibitors: 4-chloromercuribenzoate, CN^-, Na_2S, diethyl-dithiocarbamate, 8-hydroxyquinoline, K-ethylxanthate
pH optimum: 5.6-7.0 (see figure)
Temperature dependence: See figure
pH stability: 6.5-9.0 (see figure)

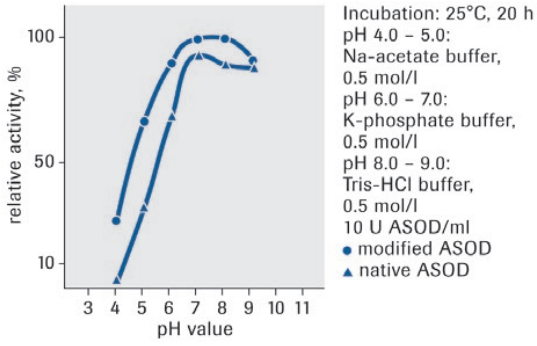


pH optimum

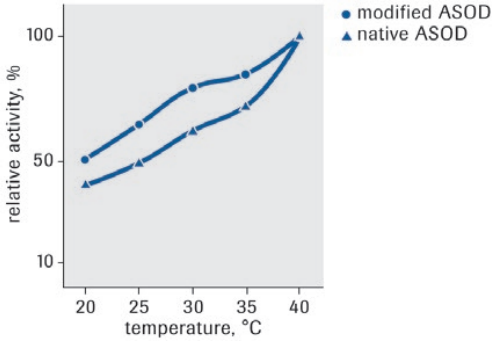
Thermal stability: Up to +70°C (see figure)
Stability of the lyophilizate: Stable at +35°C for at least 3 weeks (see figure).
Stability in solution: See figure
Specificity: Several analogs of ascorbate react.
Remark: A decrease in activity of approximately 10% may occur.

Specification

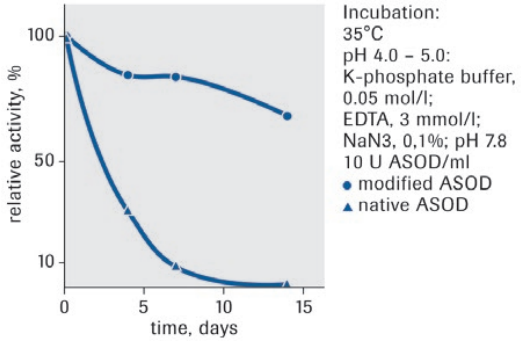
Appearance: Turquoise lyophilizate
Solubility: Clear, slightly turquoise solution in water (c=50 mg/mL)
pH value (c=50 mg/mL in water): 7.0-8.0
Activity (+25°C, L-ascorbate): ≥170 U/mg lyophilizate
Specific activity (+25°C): ≥1,700 U/mg protein
Protein (Biuret): 0.07-0.14 mg/mg lyophilizate
Contaminants (+25°C; expressed as percentage of Ascorbate Oxidase activity):
Catalase: ≤0.2
Aspartate aminotransferase (AST/GOT): No limit
Alanine aminotransferase (ALT/GPT): No limit
Peroxidase: ≤0.005
Stability: At -15 to -25°C within specification range for 12 months. Keep tightly sealed.



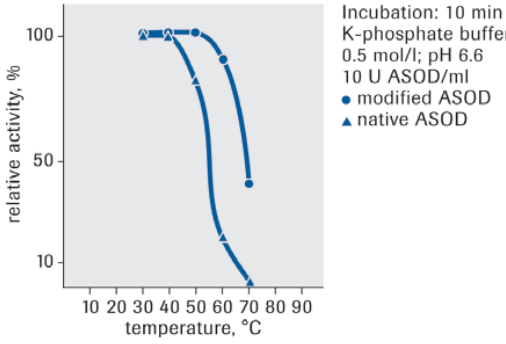
pH stability



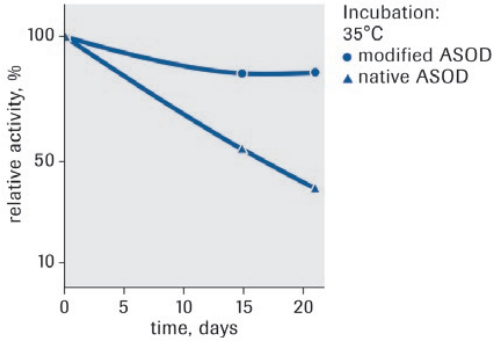
Thermal stability



pH stability



pH optimum



Thermal stability

Ascorbate Oxidase

from *Cucurbita* species, poor of AST/ALT, lyophilizate

Catalog number	Pack size
11 136 364 103	custom fill

Will be supplied as “Ascorbate Oxidase GOT-deficient”. Unit of measure is “MU”.

DRY ICE

For further processing only.

Oxidoreductase that oxidizes ascorbic acid to dehydroascorbate.

Application

Use Ascorbate Oxidase, poor of AST/ALT, in a variety of diagnostic tests to eliminate the interference of ascorbic acid, since ascorbic acid interferes with the Trinder reaction that is widely used for the colorimetric determination of analytes. It is useful in liquid as well as dry chemistry test, *e.g.,* for the determination of uric acid, lactate, creatinine or transaminases.

EC 1.10.3.3

Properties

Nomenclature: L-ascorbate:oxygen oxidoreductase
Molecular weight: Approximately 140 kD
Isoelectric point: 5.0–6.0
Michaelis constant (Phosphate buffer, pH 5.6, +25°C):
L-ascorbate: 3 x 10^{-4} mol/L
Inhibitors: 4-chloromercuribenzoate, CN^-, Na_2S, diethyl-dithiocarbamate, 8-hydroxyquinoline, K-ethylxanthate
pH optimum: 5.6–7.0 (see figure for product Cat. No. 10 199 605 103)
Temperature dependence: See figure for product Cat. No. 10 199 605 103
pH stability: 6.5–9.0 (see figure for product Cat. No. 10 199 605 103)
Thermal stability: Up to +70°C (see figure for product Cat. No. 10 199 605 103)
Stability of the lyophilizate: Stable at +35°C for at least 3 weeks (see figure).
Stability in solution: See figure for product Cat. No. 10 199 605 103
Specificity: Several analogs of ascorbate react.
Remark: A decrease in activity of approximately 10% may occur.

Specification

Appearance: Turquoise lyophilizate
Solubility: Clear, slightly turquoise solution in water (c=50 mg/mL)
pH value (c=50 mg/mL in water): 7.0-8.0
Activity (+25°C, L-ascorbate): ≥170 U/mg lyophilizate
Specific activity (+25°C): ≥1,700 U/mg protein
Protein (Biuret): 8-14 mg/100mg lyophilizate
Contaminants (+25°C, expressed as percentage of Ascorbate Oxidase activity):
Catalase: ≤0.2
Aspartate aminotransferase (AST/GOT): ≤0.0003
Alanine aminotransferase (ALT/GPT): ≤0.0005
Contaminating oxidases (FOX): ≤0.0002
Stability: At -15 to -25°C within specification range for 12 months. Keep tightly sealed.

Ascorbate Oxidase, chemically modified

from *Cucurbita* species, lyophilizate

Catalog number	Pack size
11 558 668 103	custom fill

Will be supplied as "AOD, modified". Unit of measure is "MU".

For further processing only.

Oxidoreductase that oxidizes ascorbic acid to dehydroascorbate.

Application

Use Ascorbate Oxidase, chemically modified, in a variety of diagnostic tests to eliminate the interference of ascorbic acid, since ascorbic acid interferes with the Trinder reaction that is widely used for the colorimetric determination of analytes. It is useful in liquid as well as dry chemistry test, *e.g.,* for the determination of uric acid, lactate or creatinine.

EC 1.10.3.3

Properties

Nomenclature: L-ascorbate:oxygen oxidoreductase
Molecular weight: Approximately 140 kD
Isoelectric point: 5.0-6.0
Michaelis constant (Phosphate buffer, pH 5.6, +25°C):
L-ascorbate: 3 x 10^{-4} mol/L
Inhibitors: 4-chloromercuribenzoate, CN^-, Na_2S, diethyl-dithiocarbamate, 8-hydroxyquinoline, K-ethylxanthate
pH optimum: 5.6-7.0 (see figure for product Cat. No. 10 199 605 103)
Temperature dependence: See figure
pH stability: 6.5-9.0 (see figure for product Cat. No. 10 199 605 103)
Thermal stability: Up to +70°C (see figure for product Cat. No. 10 199 605 103)

Stability of the lyophilizate: Stable at +35°C for at least 3 weeks (see figure for product Cat. No. 10 199 605 103).
Stability in solution: See figure for product Cat. No. 10 199 605 103
Specificity: Several analogs of ascorbate react.
Remark: The modified enzyme is especially suited for liquid stable applications with extended shelf life requirements.

Specification

Appearance: Turquoise lyophilizate
Solubility: Clear, slightly turquoise solution in water (c=50 mg/mL)
pH value (c=50 mg/mL in water): 7.2–8.2
Activity (+25°C, L-ascorbate): ≥120 U/mg lyophilizate
Specific activity (+25°C): ≥1,200 U/mg protein
Activity (+37°C, L-ascorbate): ≥180 U/mg lyophilizate
Specific activity (+37°C): ≥1,800 U/mg protein
Protein (BCA): 0.04–0.10 mg/mg lyophilizate
Contaminants (+25°C, expressed as percentage of Ascorbate Oxidase activity):
Catalase: ≤0.2
Glutamate oxalacetate transaminase (AST): ≤0.0003
Glutamate pyruvate transaminase (ALT): ≤0.0005
Contaminating oxidases (FOX): ≤0.0002
Stability: At -15 to -25°C within specification range for 12 months. Keep tightly sealed.

Aspartate Aminotransferase (AST) (GOT)

from pig heart, lyophilizate

Catalog number	Pack size
10 170 666 103	custom fill

Will be supplied as “GOT from Pig Heart”. Unit of measure is “kU”.

For further processing only.

Application

Use Aspartate Aminotransferase for designing your calibrator/control reagent and for the synthesis of unnatural L-amino acids from α-keto acids.

EC 2.6.1.1

Specification

Appearance: Slightly yellow lyophilizate
pH value (c=10 mg/mL in water): 7.0-8.0
Activity (+37°C, AST (ASAT/GOT)-kit): ≥45 U/mg lyophilizate
Contaminants (expressed as percentage of Aspartate Aminotransferase activity):
Contaminating oxidases (FOX): ≤0.7
Glutamate dehydrogenase: ≤0.01
Alanine Aminotransferase (ALT/GPT) : ≤0.01
Lactate dehydrogenase: ≤0.01
Malate dehydrogenase: ≤0.01
Oxaloacetate decarboxylase: ≤0.01
SDV free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 12 months. Store dry.

Aspartate Aminotransferase (AST) (GOT)

from pig heart, suspension

Catalog number	Pack size
10 153 354 103	custom fill

Will be supplied as “GOT from Pig Heart”. Unit of measure is “MU”.

For further processing only.

Application

Use Aspartate Aminotransferase for designing your calibrator/control reagent and for the synthesis of unnatural L-amino acids from α-keto acids.

EC 2.6.1.1

Specification

Appearance: Yellow suspension in ammonium sulfate
pH value: 5.5-6.5
Specific activity (+25°C; L-aspartate, α-ketoglutarate): ≥200 U/mg protein
Protein: ≥10 mg/ml (standardized to 10±1 mg/mL)
Ammonium sulfate: 3.2±0.2 mol/L
Contaminants (expressed as percentage of Aspartate Aminotransferase activity):

Glutamate dehydrogenase: ≤0.01
Alanine Aminotransferase (ALT/GPT): ≤0.01
Lactate dehydrogenase: ≤0.01
Malate dehydrogenase: ≤0.01
Oxaloacetate decarboxylase:≤0.01
SDV free: Corresponds
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 24 months.
Store dry.

N-Carbamoylsarcosine Amidase

from *E.coli* overproducer, lyophilizate

Catalog number	Pack size
11 248 847 103	custom fill

Will be supplied as "N-Carbamoyl-sarcosine Hydrolase". Unit of measure is "kU".

DRY ICE

For further processing only.

Hydrolase that catalyzes the interconversion of N-carbamoylsarcosine to sarcosine.

Application

Use N-Carbamoylsarcosine Amidase in diagnostic tests for the determination of creatinine in combination with Creatinine Deaminase Catalog No. 11 330 764 103, N-Methylhydantoinase (ATP-hydrolysing), Catalog No. 11 288 555 103, and Sarcosine Oxidase, Catalog No. 11 378 856 103.

EC 3.5.1.59

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 7.3-8.3
Activity (+25°C, carbamoylsarcosine): 0.80-1.30 U/mg lyophilizate
Protein (Biuret): 30-50 mg/100 mg lyophilizate
Contaminants (expressed as percentage of Carbamoylsarcosine Amidase activity):
Creatinase: ≤0.013
Creatininase: ≤0.01
Catalase: ≤30
Uricase: ≤0.01
Stability: At -15 to -25°C within specification range for 12 months.
Store dry. Protect from light.

Cholesterol Esterase, Grade I

from *Pseudomonas species*, **lyophilizate**

Catalog number	Pack size
11 520 857 103	custom fill

Will be supplied as “CE, Ps.species, Lyo., SQ”. Unit of measure is “MU”.

For further processing only.

Hydrolase that splits fatty acids from sterols.

Application

Use Cholesterol Esterase in diagnostic tests for the determination of cholesterol in combination with Cholesterol Oxidase, Catalog Nos. 10 634 522 103, or 11 479 709 103.

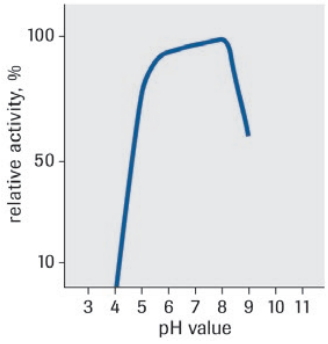
EC 3.1.1.13

Properties

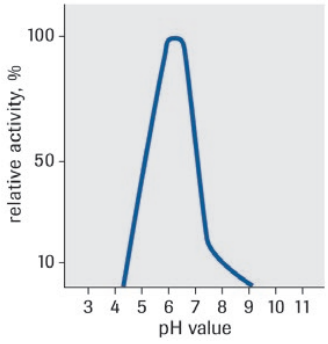
Nomenclature: Sterol-ester acylhydrolase
Molecular weight: ~129 kD
Isoelectric point: 4.5
Michaelis constant (Phosphate buffer, pH 7.5):
Cholesterol oleate: 7 x 10^{-5} mol/L
Inhibitors: Heavy metals such as Cu^{2+}, Ag^{+}, Zn^{2+}
Activators: Detergents
pH optimum: 6.0-8.0; (maximum at pH 7.6) (see figure)
Temperature dependence: Not possible to determine under assay conditions due to turbidity of Thesit at temperatures above +27°C.
pH stability: 6.0-6.5 (see figure)
Thermal stability: Below +20°C (see figure)
Specificity: Cholesterol esterase is an enzyme of lipid metabolism and gives complete cleavage of all serum cholesterol esters.
Remark: This Cholesterol esterase is especially suited for liquid stable applications with extended shelf life requirements.

Specification

Appearance: Brownish lyophilizate
Solubility: Clear, brown solution in water (c=50 mg/mL)
pH value (c=50 mg/mL in water): 7.0-8.0
Activity (+25°C, cholesterol oleate): ≥100 U/mg lyophilizate
Specific Activity: ≥100 U/mg protein
Protein (Biuret): No limit
Contaminants (expressed as percentage of Cholesterol Esterase activity):
ATPase: ≤0.005
Catalase: ≤1.00
Glycerokinase: ≤0.001
Glucose oxidase: ≤0.001
Hexokinase: ≤0.005
“NADH oxidase”: ≤0.001
Uricase: ≤0.005
Stability: At +2 to +8°C within specification range for 12 months. Store dry.

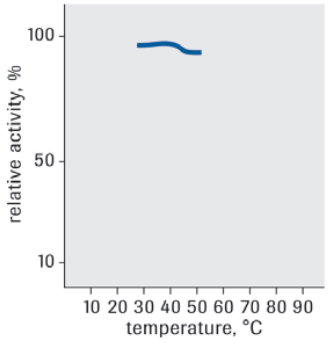


pH optimum



Incubation:
25°C, 25 h
K-phosphate buffer,
0.7 mol/l
42.9 U CE/ml

pH stability



Incubation:
10 min
K-phosphate buffer,
0.05 mol/l;
pH 6.5
18 U CE/ml

Thermal stability

Cholesterol Esterase, chemically modified

from *Pseudomonas* species, lyophilizate

Catalog number	Pack size
11 641 735 103	custom fill

Will be supplied as “Cholesterol Esterase Modified”. Unit of measure is “MU”.

For further processing only.

Hydrolase that splits fatty acids from sterols.

Application

Use Cholesterol Esterase, chemically modified in diagnostic tests for the determination of cholesterol in combination with Cholesterol Oxidase, Catalog Nos. 11 479 709 103, or 10 634 522 103.

EC 3.1.1.13

Properties

Nomenclature: Sterol-ester acylhydrolase
Molecular weight: ~129 kD
Isoelectric point: 4.5
Michaelis constant (Phosphate buffer, pH 7.5):
Cholesterol oleate: 7 x 10^{-5} mol/L
Inhibitors: Heavy metals such as Cu^{2+}, Ag^{+}, Zn^{2+}
Activators: Detergents
pH optimum: 6.0-8.0; (maximum at pH 7.6) (see figure for product Cat. No. 11 520 857 103)
Temperature dependence: Not possible to determine under assay conditions due to turbidity of Thesit at temperatures above +27°C.
pH stability: 6.0-6.5 (see figure for product Cat. No. 11 520 857 103)
Thermal stability: Below +20°C (see figure for product Cat. No. 11 520 857 103)
Specificity: Cholesterol esterase is an enzyme of lipid metabolism and gives complete cleavage of all serum cholesterol esters.

Specification

Appearance: Brownish lyophilizate
Solubility: Clear, brown solution in water (c=50 mg/mL)
Activity (+25°C, cholesterol oleate): ≥10 U/mg lyophilizate
Contaminants (expressed as percentage of Cholesterol Esterase activity):
ATPase: ≤0.005
Catalase: ≤1.00
Glycerokinase: ≤0.001
Hexokinase: ≤0.005
“NADH oxidase”: ≤0.001
Uricase: ≤0.005
NaCl: 3±0.2 mol/L
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

Cholesterol Esterase, Grade II

from *Pseudomonas* species, lyophilizate

Catalog number	Pack size
11 015 923 103	custom fill

Will be supplied as “Cholesterol Esterase from Pseudom.species”. Unit of measure is “MU”.

For further processing only.

Hydrolase that splits fatty acids from sterols.

Application

Use Cholesterol Esterase in diagnostic tests for the determination of cholesterol in combination with Cholesterol Oxidase, Catalog Nos. 10 634 522 103 or 11 479 709 103.

EC 3.1.1.13

Properties

Nomenclature: Sterol-ester acylhydrolase
Molecular weight: ~129 kD
Isoelectric point: 4.5
Michaelis constant (Phosphate buffer, pH 7.5):
Cholesterol oleate: 7 x 10^{-5} mol/L
Inhibitors: Heavy metals such as Cu^{2+}, Ag^{+}, Zn^{2+}
Activators: Detergents
pH optimum: 6.0-8.0; (maximum at pH 7.6) (see figure for product Cat. No. 11 520 857 103)
Temperature dependence: Not possible to determine under assay conditions due to turbidity of Thesit at temperatures above +27°C.
pH stability: 6.0-6.5 (see figure for product Cat. No. 11 520 857 103)
Thermal stability: Below +20°C (see figure for product Cat. No. 11 520 857 103)
Specificity: Cholesterol esterase is an enzyme of lipid metabolism and gives complete cleavage of all serum cholesterol esters.

Specification

Appearance: Slightly yellowish lyophilizate
Solubility: Clear, colorless or yellowish to brownish solution in water (c=50 mg/mL)
pH value (c=50 mg/mL in water): 7.0-8.0
Ficoll (colorimetric): 40-80 mg/100 mg lyophilizate
Activity (+25°C, cholesterol oleate): ≥30 U/mg lyophilizate
Specific Activity: ≥100 U/mg protein
Protein (Biuret): 0.1-0.4 mg/mg lyophilizate
Contaminants (expressed as percentage of Cholesterol Esterase activity):
ATPase: ≤0.005
Catalase: ≤200 U/mg lyophilizate
Glycerokinase: ≤0.001
GOD: ≤0.001
Hexokinase: ≤0.005
“NADH oxidase”: ≤0.005
Uricase: ≤0.005
Stability: At +2 to +8°C within specification range for 12 months.

Cholesterol Esterase

from *Candida cylindracea*, lyophilizate

Catalog number	Pack size
10 129 046 103	custom fill

Will be supplied as "Cholesterol Esterase, *Candida cylindracea*". Unit of measure is "MU".

For further processing only.

Hydrolase that splits fatty acids from sterols.

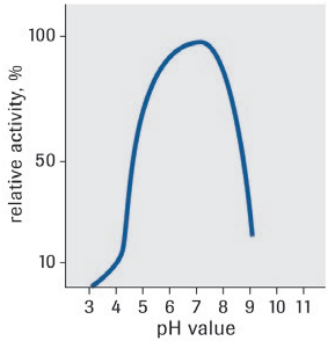
Application

Use Cholesterol Esterase in diagnostic tests for the determination of cholesterol in combination with Cholesterol Oxidase, Catalog Nos. 10 634 522 103 or 11 479 709 103.

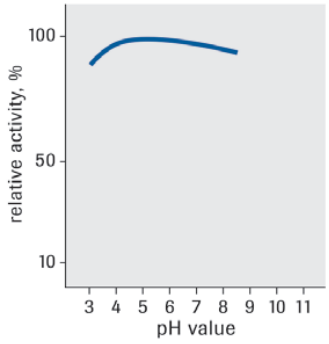
EC 3.1.1.13

Specification

Appearance: Almost white lyophilizate
Solubility: Clear, colorless solution in phosphate buffer, 0.05 mol/L, pH 6.0 (c=10 mg/mL)
pH value: 5.5-6.5
Activity (+25°C; cholesterol oleate): ≥10.5 U/mg lyophilizate
Protein (Lowry): 0.20-0.30 mg/mg lyophilizate
Contaminants (expressed as percentage of Cholesterol Esterase activity):
ATPase: ≤0.005
Glucose oxidase: ≤0.001
Glycerokinase: ≤0.001
Hexokinase: ≤0.005
Catalase: ≤1 U/mg lyophilizate
"NADH oxidase": ≤0.005
Proteases: No limit
Uricase: ≤0.005
Stability: At +2 to +8°C within specification range for 12 months. Store dry.

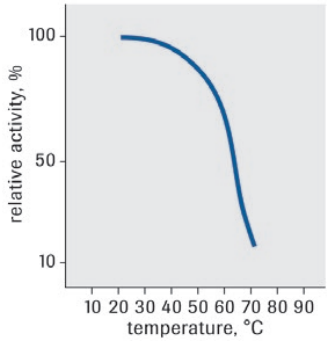


pH optimum



Incubation:
25°C, 20 h
pH 3.0 – 5.0:
Na-acetate buffer,
0.7 mol/l
pH 4.0 – 8.2:
K-phosphate buffer,
0.7 mol/l
48.7 U CE/ml

pH stability



Incubation:
10 min
K-phosphate buffer,
0.05 mol/l;
pH 6.5
48.7 U CE/ml

Thermal stability

Cholesterol Esterase

from *Candida cylindracea*, solution

Hydrolase that splits fatty acids from sterols.

Application

Use Cholesterol Esterase in diagnostic tests for the determination of cholesterol in combination with Cholesterol Oxidase, Catalog Nos. 10 634 522 103 or 11 479 709 103. Apply this ready-to-use enzyme directly in your diagnostic test.

EC 3.1.1.13

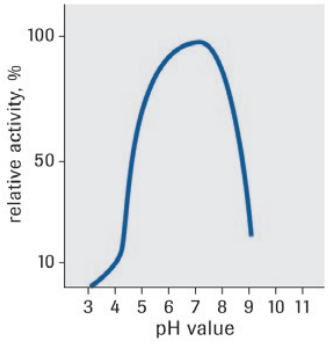
Specification

Appearance: Clear to turbid, brownish-yellow solution in NaCl
pH value: 5.7-6.3
Specific activity (+25°C; cholesterol oleate): ≥26 U/mg
Volume activity: For information only [U/mL]
Protein (Lowry): ≥2 mg/mL
NaCl (chloride meter): 3±0.2 mol/L
Contaminants (expressed as percentage of Cholesterol Esterase activity):
ATPase: ≤0.005
Glucose oxidase: ≤0.001
Glycerokinase: ≤0.001
Hexokinase: ≤0.005
Catalase: ≤200 U/mg
"NADH oxidase": ≤0.005
Uricase: ≤0.005
Stability: At +2 to +8°C within specification range for 12 months.

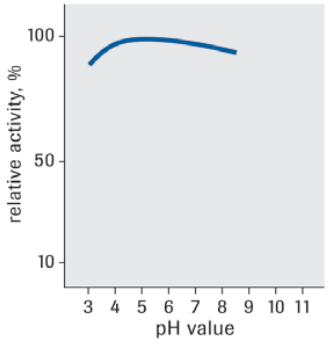
Catalog number	Pack size
10 262 609 103	custom fill

Will be supplied as "Cholesterol Esterase, Candida cylindracea". Unit of measure is "MU".

For further processing only.

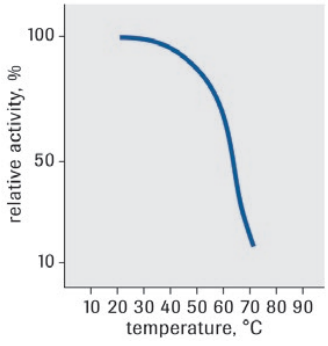


pH optimum



Incubation:
25°C, 20 h
pH 3.0 – 5.0:
Na-acetate buffer,
0.7 mol/l
pH 4.0 – 8.2:
K-phosphate buffer,
0.7 mol/l
48.7 U CE/ml

pH stability



Incubation:
10 min
K-phosphate buffer,
0.05 mol/l;
pH 6.5
48.7 U CE/ml

Thermal stability

Cholesterol Oxidase

from *Brevibacterium* species, expressed in *E.coli*, lyophilizate

Oxidoreductase that catalyzes the interconversion of cholesterol to cholest-4-en-3-one.

Application

Use Cholesterol Oxidase in diagnostic tests for the determination of cholesterol in combination with Cholesterol Esterase, Catalog Nos. 10 129 046 103, 10 262 609 103, 11 015 923 103, 11 520 857 103 or 11 641 735 103.

EC 1.1.3.6

Properties

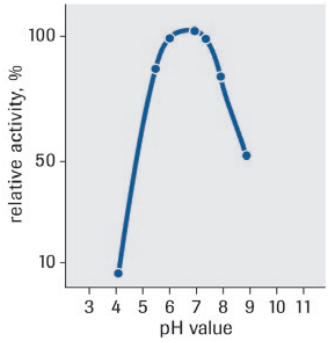
Nomenclature: Cholesterol:oxygen oxidoreductase
Molecular weight: 60 kD (native and SDS)
Isoelectric point: ~5.0
Michaelis constant (Phosphate buffer, 0.5 mol/l, pH 7.5; +25°C): Cholesterol: 1 x 10^{-4} mol/L
Inhibitors: Hg^{2+}, $ZnCl_2$, SDS
Activators: Non ionic detergents
pH optimum: 5.5-8.0 (see figure)
Temperature dependence: See figure
pH stability: 5.0-10.0 (see figure)
Thermal stability: Up to +55°C (see figure)
Storage and Stability: No decrease in activity over 6 weeks at +35°C (see figure)
Specificity:
cholesterol 100%
pregnenolon 52%
stigmasterol 17%
dehydroandrosterone 0.5%
androsterone 0%
estradiol 0%
cholate 0%

Catalog number	Pack size
11 479 709 103	custom fill

Will be supplied as “ChOD, Brevibacterium rec.”. Unit of measure is “MU”.

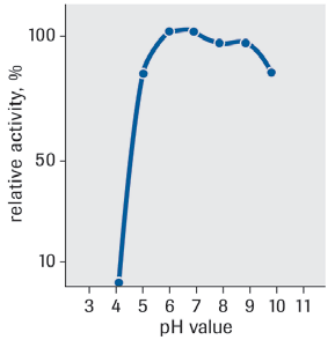
DRY ICE

For further processing only.



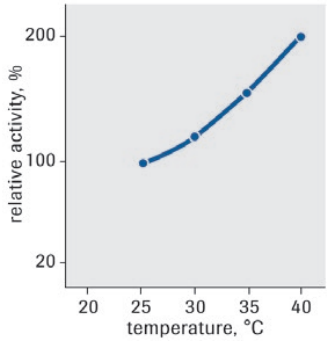
pH 4.0:
citrate buffer, 0.5 mol/l
pH 5.5 – 8.0:
phosphate buffer,
0.5 mol/l;
pH 9.0:
glycine buffer,
0.5 mol/l
0.22 U CO/ml

pH optimum



Incubation:
25°C, 24 h
pH 4.0 – 5.0:
citrate buffer, 0.5 mol/l
pH 5.5 – 8.0:
phosphate buffer,
0.5 mol/l
pH 9.0 –10.0:
glycine buffer,
0.5 mol/l
3 U CO/ml

pH stability

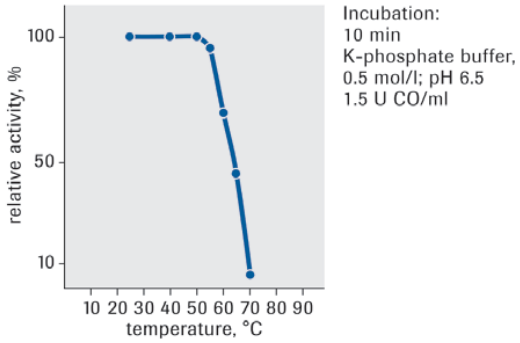


0.22 U CO/ml

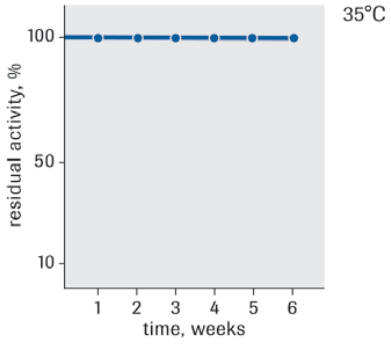
Temperature dependence

Specification

Appearance: Yellow lyophilizate
Solubility: Clear, yellowish solution in water (c=10 mg/mL)
pH value: 6.0-7.0
Activity (+25°C, cholesterol): 10-20 U/mg lyophilizate
Protein (Biuret): 10-30 mg/100 mg lyophilizate
Contaminants (expressed as percentage of Cholesterol Oxidase activity):
Catalase: ≤6.0
Glucose oxidase: ≤0.01
"NADH oxidase": ≤0.01
Uricase: ≤0.01
Stability: At -15 to -25°C within specification range for 12 months. Store dry.



Thermal stability



Stability of the lyophilizate

Cholesterol Oxidase

from *Streptomyces* species, lyophilizate

Oxidoreductase that catalyzes the interconversion of cholesterol to cholest-4-en-3-one.

Application

Use Cholesterol Oxidase in diagnostic tests for the determination of cholesterol in combination with Cholesterol Esterase, Catalog Nos. 10 129 046 103, 10 262 609 103, 11 015 923 103, 11 520 857 103 or 11 641 735 103.

EC 1.1.3.6

Specification

Appearance: Yellow lyophilizate
Solubility: Clear, yellow solution in water (c=20 mg/mL)
pH value (c=20 mg/mL): 7.0–8.0
Activity (+25°C, cholesterol): ≥3.0 to 4.6 U/mg lyophilizate
Specific activity: ≥40.0 U/mg protein
Protein (Biuret): No limit
Contaminants (expressed as percentage of Cholesterol Oxidase activity):
Glucose oxidase: ≤0.01
Catalase: ≤1.00
Uricase: ≤0.01
Stability: At -15 to -25°C within specification range for 12 months. Store dry.

Catalog number	Pack size
10 634 522 103	custom fill

Will be supplied as “Cholesterol Oxidase, Streptomyces species”. Unit of measure is “kU”.

DRY ICE

For further processing only.

Citrate Lyase

from *Klebsiella pneumoniae*, lyophilizate

Catalog number	Pack size
10 354 066 103	custom fill

Will be supplied as “Citrate Lyase (CL), Aerobacter aerogenes”. Unit of measure is “kU”.

For further processing only.

Enzyme that catalyzes the interconversion of oxalacetate and acetate to citrate.

Application

Use Citrate lyase in tests for citric acid in combination with Malate Dehydrogenase, Catalog Nos. 11 866 109 103 and 10 200 387 103, and Lactate Dehydrogenase, Catalog Nos. 11 291 416 103, 12 235 650 103 or 10 003 557 103.

EC 4.1.3.6

Specification

Appearance: Slightly beige lyophilizate
pH value (hydrous solution): 6.5-7.5
Activity (+25 °C, citrate): ≥0.25 U/mg lyophilizate
Contaminants (expressed as percentage of Citrate Lyase activity):
Isocitrate dehydrogenase (NAD specific): ≤0.05
‘’NADH-oxidase’’: ≤0.05
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

Citrate Synthase

from pig heart, suspension

Catalog number	Pack size
10 153 605 103	custom fill

Will be supplied as “Citrate Synthase (CS) from Pig Heart”. Unit of measure is “g”.

For further processing only.

Enzyme that catalyzes the formation of citrate from acetyl-CoA and oxalacetate.

Application

Use Citrate Synthase in reagents for acetic acid testing in combination with Acetate-CoA Ligase (Acetyl-CoA Synthetase), Catalog Nos. 10 128 180 103 and 10 885 568 103, and Malate Dehydrogenase, Catalog Nos. 11 866 109 103 and 10 200 387 103.

EC 2.3.3.1

Specification

Appearance: Slightly grey-brown suspension in ammonium sulfate, 3.2 mol/L; potassium phosphate, 0.02 mol/L; pH approximately 7
Specific activity (+25°C, oxaloacetic acid): ≥110 U/mg protein
Protein (Biuret): ≥10 mg/mL
Contaminants (expressed as percentage of Citrate Synthase activity):
Oxaloacetate decarboxylase: ≤0.1
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 24 months.

Colipase

from porcine pancreas, lyophilizate

Catalog number	Pack size
10 204 307 103	custom fill

Will be supplied as "Colipase from Porcine Pancreas". Unit of measure is "g active ingredient".

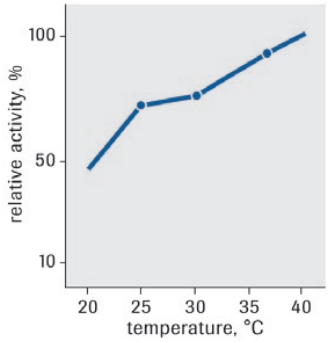
For further processing only.

Application

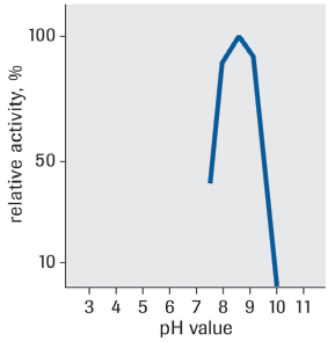
Use Colipase as a co-emulsifier in diagnostic tests for the determination of lipase activity in combination with chromogenic Lipase Substrate, Catalog No. 11 034 618 103.

Properties

Molecular weight: Approximately 10 kD
Isoelectric point: 5.0
pH optimum: 8.8 (see figure)
Temperature dependence: See figure
pH stability: 3.5-11.5 (see figure)
Thermal stability: +25 to +80°C (see figure)
Specificity: Pancreatic colipase consists of 3 forms, colipase101 (procolipase), colipase96 and colipase85 (numbers stand for amino acid residues). colipase96 and colipase85 are trypsin digestion products of colipase101.



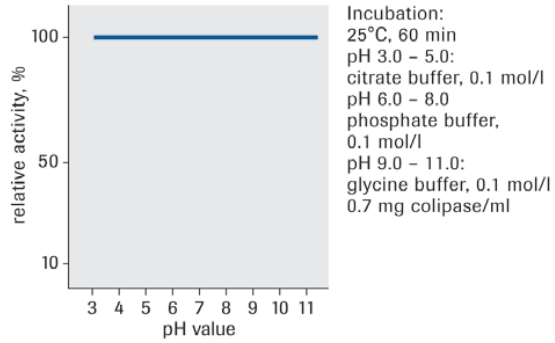
Temperature dependence



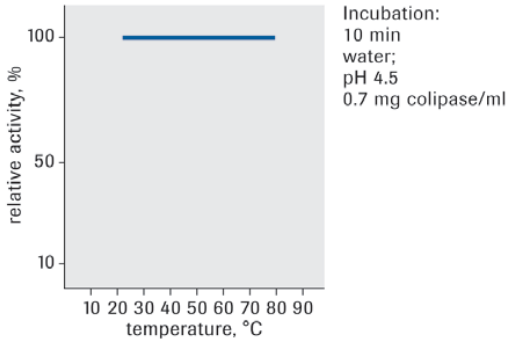
pH optimum

Specification

Appearance: White lyophilizate, TEA buffer, pH 6.0
Solubility: Clear, colorless solution in water (c=1 mg/mL)
pH value (c=1 mg/mL in water): 5.0-7.0
Activity (+25°C, tributyrin): ≥70,000 U/mg lyophilizate
Colipase: ≥0.6 mg/mg lyophilizate
Protein (Lowry): 0.8±0.2 mg/mg lyophilizate
Contaminants:
Lipase: ≤0.0005 U/mg lyophilizate
Proteases: ≤180 U/mg lyophilizate
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 24 months.
Store dry.



pH stability



Thermal stability

Creatinase

from microorganism, lyophilizate

Catalog number	Pack size
11 799 142 103	custom fill

Will be supplied as “Creatinase, Microbial Lyophil. Substance”. Unit of measure is “MU”.

DRY ICE

For further processing only.

Hydrolase for creatinine determination that catalyzes the conversion of creatine to sarcosine and urea.

Application

Use Creatinase in your diagnostic tests for the determination of creatinine in combination with Creatininase, Catalog No. 11 865 471 103 and Sarcosine Oxidase, Catalog No. 11 378 856 103.

EC 3.5.3.3

Specification

Appearance: White to slightly yellowish lyophilizate
Solubility: Clear, colorless solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 5.5-6.5
Activity (+25°C, creatine, POD/PAP method): ≥4 U/mg lyophilizate
Specific activity: ≥9 U/mg protein
Protein (Biuret): 0.3-0.5 mg/mg lyophilizate
Contaminants (expressed as percentage of Creatinase activity):
Creatininase: ≤0.01
Catalase: ≤2
Creatinine deaminase: ≤0.01
Proteases (casein/resorufin, 2 hours stress duration): ≤0.001
Contaminating oxidases (FOX): ≤0.001
Stability: At -15 to -25°C within specification range for 12 months.

Creatininase

from *Pseudomonas* species, expressed in *E.coli*, lyophilizate

Hydrolase for creatinine determination that catalyzes the conversion of creatinine to creatine.

Application

Use Creatininase in diagnostic tests for the determination of creatinine in combination with Creatinase, Catalog No. 11 799 142 103 and Sarcosine Oxidase, Catalog No. 11 378 856 103.

EC 3.5.2.10

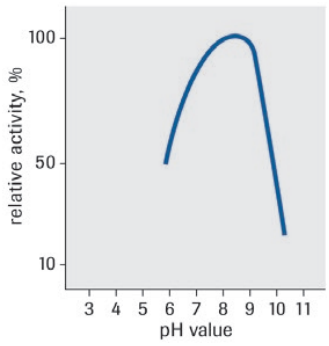
Properties

Nomenclature: Creatinine amidohydrolase
Molecular weight (gel filtration): 175 kD
Structure (SDS PAGE): 8 equal subunits (23 kD + zinc)
Isoelectric point (IEF): 4.7
Michaelis constants (Glycylglycine buffer, pH 8.0, +25°C)**:**
Creatinine: 3 x 10^{-2} mol/L
Creatine: 6 x 10^{-2} mol/L
Inhibitors: Hg^{2+}, Fe^{3+}, Cu^{2+} (1 mmol/L), N-bromosuccinimide, o-phenanthronline, 4-chloromercuribenzoate. The enzyme is sensitive against photooxidation. A stable, inactive apoenzyme free of zinc can be obtained after EDTA incubation which can be reactivated completely with Zn^{2+}, Mn^{2+}, Mg^{2+}, Co^{2+}, Fe^{2+} or Ni^{2+} (1 mmol/L).
Activators: Mn^{2+}, Mg^{2+}. The enzyme requires metal ions. Phenylmethylsulfonylfluoride and iodoacetamide do not react.
pH optimum: 7.8 (see figure)
Temperature dependence: See figure
pH stability: 7.5-9.0 (see figure
Thermal stability: Up to +65°C (see figure)
Specificity: Creatininase is specific for creatinine. It also reacts with glycocyamidine and glycocyamine. It does not react with hydantoin and its derivatives.

Catalog number	Pack size
11 865 471 103	custom fill

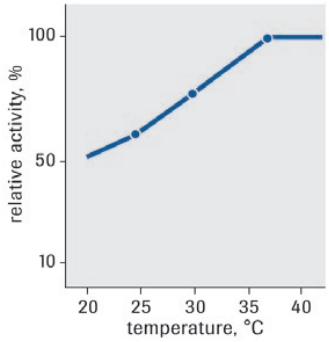
Will be supplied as “Creatininase, Recombinant Lyo”. Unit of measure is “MU”.

For further processing only.



Incubation:
25°C, 120 min
pH 6.0 –10.0:
K-phosphate
buffer, 20 mmol/l
40 U creatininase/ml

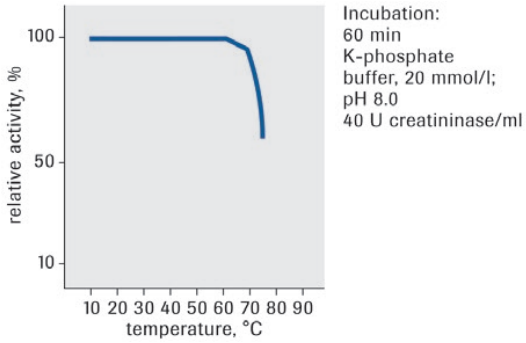
pH stability



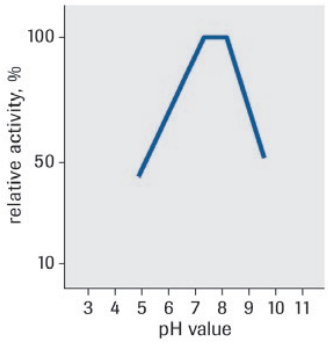
Temperature dependence

Specification

Appearance: White to slightly yellowish lyophilizate
Solubility: Clear, colorless to slightly yellowish solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 7.0-8.0
Activity (+25°C, creatinine): ≥55 U/mg lyophilizate
Specific activity: ≥250 U/mg protein
Protein (Biuret): 0.10-0.35 mg/mg lyophilizate
Contaminants (expressed as percentage of Creatininase activity):
ATPase: ≤0.01
Catalase: ≤2.0
Contaminating oxidases (FOX): ≤0.001
Creatinine deaminase: ≤0.0015
Kinase test: ≤0.01
Proteases (casein/resorufin, 2 hours stress duration): ≤0.005
Stability: At +2 to +8°C within specification range for 12 months. Store dry. Protect from light.



Thermal stability



pH optimum

Creatinine Deaminase

from *Corynebacterium lilium*, **lyophilizate**

Hydrolase for creatinine determination that catalyzes the conversion of creatinine to N-methylhydantoin and ammonia.

Catalog number	Pack size
11 330 764 103	custom fill

Will be supplied as “Creatinine Deiminase”. Unit of measure is “MU”.

For further processing only.

Application

Use Creatinine Deaminase in diagnostic tests for the determination of creatinine in combination with N-Carbamoylsarcosine Amidase, Catalog No. 11 248 847 103, N-Methylhydantoinase (ATP-hydrolysing), Catalog No. 11 288 555 103 and Sarcosine Oxidase, Catalog No. 11 378 856 103.

EC 3.5.4.21

Specification

Appearance: Beige lyophilizate
Solubility: Clear, yellowish solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 8.0-9.0
Activity (+25°C, creatinine, via N-methylhydantoin, UV): 45.0-90.0 U/mg lyophilizate

Activity (+25°C, creatinine, via NH_3, UV): 35.0-70.0 U/mg lyophilizate
Protein (BCA): 10-30 mg/100 mg lyophilizate
Contaminants (expressed as percentage of Creatinine Desaminase activity)
ATPase: ≤0.1
Creatinase: ≤0.013
Creatininase: ≤0.01
Catalase: ≤10.0
Urease: ≤0.007
Uricase: ≤0.01
NH_3: ≤0.01µg/U
Stability: At +2 to +8°C within specification range for 12 months.
Store dry. Protect from light.

Formate Dehydrogenase

from yeast, lyophilizate

Catalog number	Pack size
10 204 226 103	custom fill

Will be supplied as ''Formate Dehydrogenase from Yeast''. Unit of measure is ''kU''.

For further processing only.

Dehydrogenase that catalyzes the interconversion of formate to carbon dioxide.

Application

Use Formate Dehydrogenase in diagnostic tests for the determination of oxalate in combination with Oxalate Decarboxylase or for the determination of formic acid. Also used in cofactor recycling systems for NADH.

EC 1.2.1.2

Specification

Appearance: White lyophilizate
pH value (c=10 mg/mL in water): Approximately 7.5
Activity (+25°C, formiate): ≥0.40 U/mg lyophilizate
Specific activity: ≥3.0 U/mg protein
Contaminants (expressed as percentage of Formate Dehydrogenase activity):
Alcohol dehydrodenase: ≤0.05
Lactate dehydrogenase: ≤0.05
Malate dehydrogenase: ≤0.1
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

Galactose 1-Dehydrogenase

from *E.coli* overproducer, lyophilizate

Catalog number	Pack size
11 290 983 103	custom fill

Will be supplied as "β-Galactose Dehydrogenase S". Unit of measure is "kU".

For further processing only.

Dehydrogenase that catalyzes the oxidation of galactose to D-galactono-1,4-lactone.

Application

Use Galactose 1-Dehydrogenase in diagnostic tests for the determination of total galactose.

EC 1.1.1.48

Specification

Appearance: White lyophilizate
Specific activity (+25°C, galactose): ≥50 U/mg protein
Protein (Biuret): ≥0.3-0.7 mg/mg lyophilizate
Contaminants (expressed as percentage of Galactose 1-Dehydrogenase activity):
Alcohol dehydrogenase: ≤0.01
β-Galactosidase: ≤0.01
Glutamate dehydrogenase (standard): ≤0.5
Lactate dehydrogenase: ≤0.1
''NADH-oxidase'': ≤0.05
Stability: At +2 to +8°C within specification range for 12 months.

Galactose 1-Dehydrogenase

from *E.coli* overproducer, suspension

Catalog number	Pack size
10 633 313 103	custom fill

Will be supplied as "β-Galactose Dehydrogenase S, *E. coli*". Unit of measure is "kU".

For further processing only.

Dehydrogenase that catalyzes the oxidation of galactose to D-galactono-1,4-lactone.

Application

Use Galactose 1-Dehydrogenase in diagnostic tests for the determination of total galactose.

EC 1.1.1.48

Specification

Appearance: White suspension in ammonium sulfate solution, 3.2 mol/L, pH approximately 6
Specific activity (+25°C, D-galactose): ≥100 U/mg protein
Protein (Biuret): ≥1 mg/mL
Contaminants (expressed as percentage of Galactose 1-Dehydrogenase activity):
Alcohol dehydrogenase: ≤0.01
β-Galactosidase: ≤0.01

Lactate dehydrogenase: ≤0.1
Malate dehydrogenase: ≤1.0
''NADH-oxidase'': ≤0.05
Stability: At +2 to +8°C within specification range for 12 months.

Galactose 1-Dehydrogenase

from *Pseudomonas fluorescens*, **suspension**

Catalog number	Pack size
10 150 959 103	custom fill

Will be supplied as "β-Gal-DH from Pseudomonas fluorescens". Unit of measure is "kU".

For further processing only.

Dehydrogenase that catalyzes the oxidation of galactose to D-galactono-1,4-lactone.

Application

Use Galactose 1-Dehydrogenase in diagnostic tests for the determination of total galactose.

EC 1.1.1.48

Specification

Appearance: White suspension in ammonium sulfate solution, 3.2 mol/L; EDTA, 1 mmol/L; pH approximately 6
Specific activity (+25°C, D-galactose): ≥5 U/mg protein
Protein (Biuret): 5±0.5 mg/mL
Contaminants (expressed as percentage of Galactose 1-Dehydrogenase activity):
Alcohol dehydrogenase: ≤0.01
β-Galactosidase: ≤0.01
Lactate dehydrogenase: ≤0.5
''NADH-oxidase'': ≤0.1
Stability: At +2 to +8°C within specification range for 12 months.

Glucose Oxidase (GOD), Grade I

from *Aspergillus niger* **overproducer, lyophilizate**

Catalog number	Pack size
12 158 566 103	custom fill

Will be supplied as "GOD, RG I, rec., Lyo.". Unit of measure is "MU".

For further processing only.

Oxidoreductase that catalyzes the conversion of D-glucose to D-glucono-1,5-lactone which hydrolyzes spontanously to gluconate.

Application

Use Glucose Oxidase (GOD), Grade I for the determination of α-amylase and D-glucose or O_2.

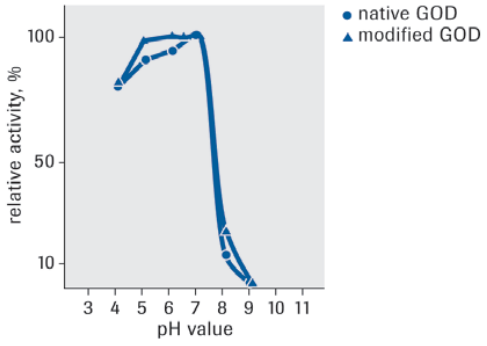
EC 1.1.3.4

Properties

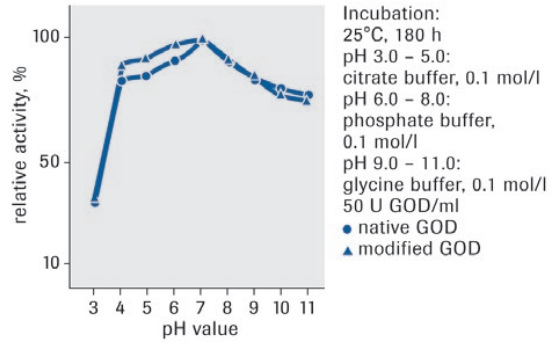
Nomenclature: β-D-glucose:oxygen 1-oxidoreductase
Molecular weight: 79 kD
Isoelectric point: 4.3
Michaelis constants (Glucose):
Acetate buffer, pH 5.0, +25°C: 3.6 x 10^{-2} mol/L
Potassium phosphate buffer, 0.2 mol/l, pH 7.5, +25°C: 4.8 x 10^{-2} mol/L
Inhibitors: Ag^{+}, Hg^{2+}, Cu^{2+}, 4-choloromercuribenzoate, D-arabinose (50%). FAD binding is inhibited by several nucleotides.
pH optimum: 7.0 (see figure)
Temperature dependence: See figure
pH stability: See figure
Thermal stability: See figure
Specificity: Glucose oxidase is specific for β-D-glucose. O_2 can be replaced by hydrogen acceptors such as 2,6-dichlorophenol indophenol.

Specification

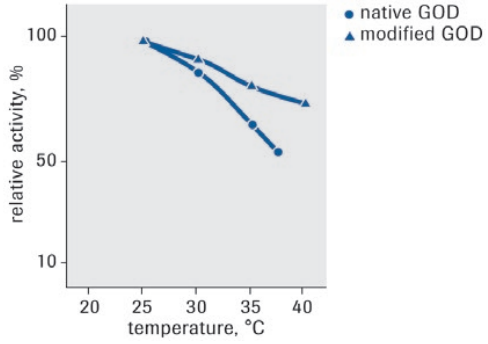
Appearance: Yellowish lyophilizate
Conductivity (1%, w/v): ≤250 µS/cm
Activity (+25°C, glucose): ≥300 U/mg lyophilizate
Contaminants (expressed as percentage of Glucose Oxidase activity):
Amylase: ≤0.01
Catalase: ≤0.5
Saccharase: ≤0.01
Stability: At +2 to +8°C within specification range for 24 months. Store dry.



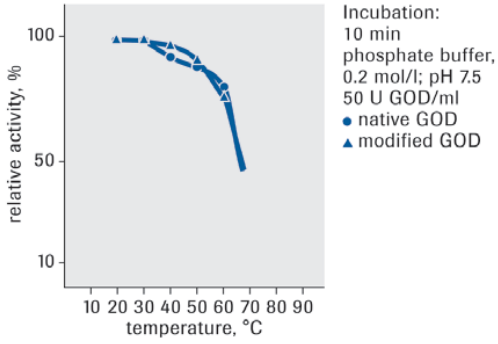
pH optimum



pH stability



Temperature dependence



Thermal stability

Glucose Oxidase (GOD), Grade II

from *Aspergillus niger* overproducer, lyophilizate

Catalog number	Pack size
11 939 998 103	custom fill

Will be supplied as “GOD, rec., Lyo.”. Unit of measure is “MU”.

For further processing only.

Oxidoreductase that catalyzes the conversion of D-glucose to D-glucono-1,5-lactone which hydrolyzes spontanously to gluconate.

Application

Use Glucose Oxidase (GOD), Grade II for the determination of α-amylase and D-glucose or O_2.

EC 1.1.3.4

Properties

Nomenclature: β-D-glucose:oxygen 1-oxidoreductase
Molecular weight: 79 kD
Isoelectric point: 4.3
Michaelis constants (Glucose):
Acetate buffer, pH 5.0, +25°C: 3.6 x 10^{-2} mol/L
Potassium phosphate buffer, 0.2 mol/L, pH 7.5, +25°C: 4.8 x 10^{-2} mol/L
Inhibitors: Ag^+, Hg^{2+}, Cu^{2+}, 4-choloromercuribenzoate, D-arabinose (50%). FAD binding is inhibited by several nucleotides.
pH optimum: 7.0 (see figure for product Cat. No. 12 158 566 103)
Temperature dependence: See figure for product Cat. No. 12 158 566 103
pH stability: See figure for product Cat. No. 12 158 566 103
Thermal stability: See figure for product Cat. No. 12 158 566 103
Specificity: Glucose oxidase is specific for β-D-glucose. O_2 can be replaced by hydrogen acceptors such as 2,6-dichlorophenol indophenol.

Specification

Appearance: Yellow brown lyophilizate
Solubility: Clear, yellow solution in phosphate buffer, 0.1 mol/L, pH 7.0 (c=5 mg/mL)
pH value (c=10 mg/mL in water): 6.8-7.8
Activity (+25°C, glucose): ≥250 U/mg lyophilizate
Protein (Pierce): No limit
Contaminants (expressed as percentage of Glucose Oxidase activity):
Amylase: ≤0.1
Catalase: ≤5 U/mg lyophilizate
Saccharase: ≤0.1
Stability: At +2 to +8°C within specification range for 24 months.
Store dry.

Glucose Oxidase (GOD), chemically modified

from *Aspergillus niger* **overproducer, lyophilizate**

Catalog number	Pack size
11 485 938 103	custom fill

Will be supplied as "GOD, Asp.niger, Bound to Dextran". Unit of measure is "MU".

For further processing only.

Oxidoreductase that catalyzes the conversion of D-glucose to D-glucono-1,5-lactone which hydrolyzes spontanously to gluconate.

Application

Use Glucose Oxidase (GOD), chemically modified for the determination of α-amylase and D-glucose or O_2. The chemical modification generates an increased liquid stability of the enzyme.

EC 1.1.3.4

Properties

Nomenclature: β-D-glucose:oxygen 1-oxidoreductase
Molecular weight: 79 kD
Isoelectric point: 4.3
Michaelis constants (Glucose):
Acetate buffer, pH 5.0, +25°C: 3.6 x 10^{-2} mol/L
Potassium phosphate buffer, 0.2 mol/L, pH 7.5, +25°C: 4.8 x 10^{-2} mol/L
Inhibitors: Ag^{+}, Hg^{2+}, Cu^{2+}, 4-choloromercuribenzoate, D-arabinose (50%). FAD binding is inhibited by several nucleotides.
pH optimum: 7.0 (see figure for product Cat. No. 12 158 566 103)
Temperature dependence: See figure for product Cat. No. 12 158 566 103
pH stability: See figure for product Cat. No. 12 158 566 103
Thermal stability: See figure for product Cat. No. 12 158 566 103
Specificity: Glucose oxidase is specific for β-D-glucose. O_2 can be replaced by hydrogen acceptors such as 2,6-dichlorophenol indophenol.
Remark: The modified enzyme is especially suited for liquid stable applications with extended shelf life requirements.

Specification

Appearance: Yellowish white lyophilizate
pH value (c=40 mg/mL in water): 6.5-7.5
Activity (+25°C, glucose): ≥20 U/mg lyophilizate
Contaminants (expressed as percentage of Glucose Oxidase activity):
Catalase: ≤20 U/mg lyophilizate
Stability: At +2 to +8°C within specification range for 12 months. Store dry.

Glucose-6-phosphate Dehydrogenase (G6P-DH)

from *Leuconostoc mesenteroides*, **expressed in** *E. coli*, **lyophilizate**

Catalog number	Pack size
11 293 206 103	custom fill

Will be supplied as "G6P-DH, rec., Lyo". Unit of measure is "MU".

For further processing only.

Dehydrogenase, that catalyzes the oxidation of Glucose-6-phosphate.

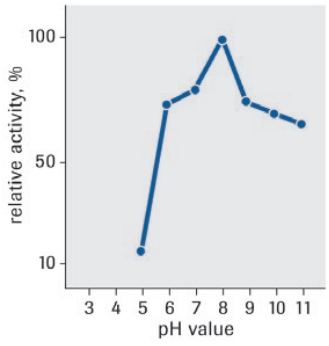
Application

Use Glucose-6-phosphate Dehydrogenase for the determination of blood glucose or creatine kinase.

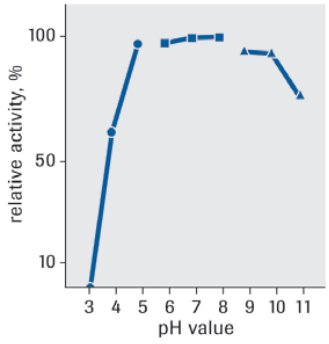
EC 1.1.1.49

Properties

Nomenclature: D-glucose-6-phosphate:NAD(P)$^+$ 1-oxidoreductase
Molecular weight: 110 kD (1) (2 identical subunits 55,000 D)
Isoelectric point: pH 4.6
Michaelis constants (Tris: 0.1 mol/L; pH 7.8, +25°C)**:**
NAD: 1.4 x 10^{-4} mmol/L
NADP: 3.7 x 10^{-5} mmol/L
Glucose-6-P: 3.7 x 10^{-4} mmol/L (NAD as coenzyme)
Glucose-6-P: 2.0 x 10^{-4} mmol/L (NADP as coenzyme)
Activators/inhibitors:
Phosphate, 5 mmol/L: 100% (NAD), 80% (NADP)
Phosphate, 50 mmol/L: 100% (NAD), 80% (NADP)
Without Mg^{2+}: 90% (NAD), 80% (NADP)
Mg^{2+}, 3 mmol/L: 100% (NAD), 100% (NADP)
Mg^{2+}, 30 mmol/L: 100% (NAD), 100% (NADP)
HCO^{3-}, 3 mmol/L: 100% (NAD), 100% (NADP)
Inhibitors: NADPH is a competitive inhibitor in the NAD-dependent reaction. Unlike the yeast enzyme, myristic acid, dehydroepiandrosterone and palmitoyl CoA do not inhibit.
pH optimum: 7.8 (see figure)
Temperature dependence: See figure
pH stability: 5.0-10.0 (see figure)
Thermal stability: Up to +40°C for native G6P-DH, up to +50°C for modified G6P-DH (see figure)
Buffer stability: Temperature stability can be significantly improved by the increase of ionic strength (see figure).
Stability of the lyophilizate: 100% residual activity after 3 weeks at +35°C
Specificity: G6P-DH is highly specific for glucose-6-phosphate and does not react with fructose-6-P, fructose-1,6-P2 or glucose-1P. 2-Deoxyglucose-6-P is slowly oxidized with NAD (5%) and with NADP (4%).

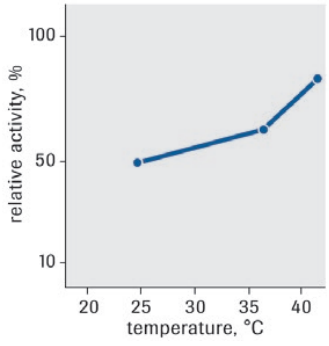


pH optimum



Incubation:
25°C, 180 min
● pH 3.0 – 5.0:
citrate buffer, 0.1 mol/l
■ pH 6.0 – 8.0:
phosphate buffer,
0.1 mol/l
▲ pH 9.0 –11.0:
glycine buffer, 0.1 mol/l
500 U G6P-DH/ml

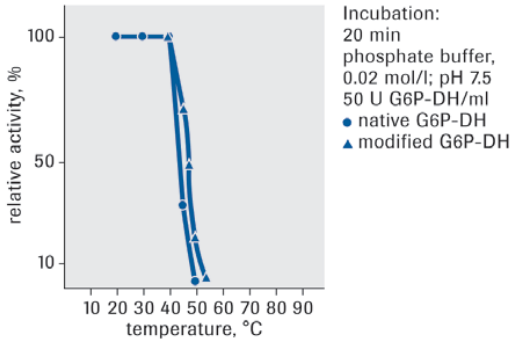
pH stability



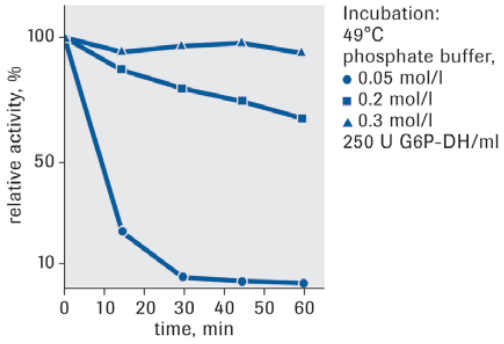
Temperature dependence

Specification

Appearance: White or slightly yellowish lyophilizate
Solubility: Clear, colorless solution in water (c=10 mg/mL)
pH value (c=10 mg/mL, water): 6.5-7.5
Activity (+25°C, glucose-6-P, NAD): ≥600 U/mg lyophilizate
Specific activity (+25°C): ≥800 U/mg protein
Activity (+30°C): ≥750 U/mg lyophilizate
Activity (+37°C): ≥1,000 U/mg lyophilizate
Activity (+25°C, glucose-6-P, NADP): No limit
Protein (Biuret): 0.7-0.9 mg/mg lyophilizate
Contaminants (expressed as percentage of Glucose-6-phosphate dehydrogenase activity):
ATPase: ≤0.02
Creatine kinase: ≤0.001
Glutamate dehydrogenase: ≤0.01
Glutathione reductase: ≤0.001
Hexokinase and Glucose dehydrogenase: ≤0.05
Myokinase: ≤0.001
''NADH oxidase'': ≤0.02
''NADPH oxidase'': ≤0.0005
6-Phosphogluconate dehydrogenase (NAD as coenzyme): ≤0.001
6-Phosphogluconate dehydrogenase (NADP as coenzyme): ≤0.001
Phophoglucose isomerase : ≤0.01
Phosphoglucomutase: ≤0.001
Stability: At +2 to +8°C within specification range for 12 months. Store dry.



Thermal stability



Buffer stability

Glucose-6-phosphate Dehydrogenase (G6P-DH), chemically modified

from *Leuconostoc mesenteroides*, **expressed in** *E. coli*, **lyophilizate**

Catalog number	Pack size
11 389 343 103	custom fill

Will be supplied as "G6P-DH, rec., Lyo., mod.". Unit of measure is "MU".

For further processing only.

Recombinant dehydrogenase, that catalyzes the oxidation of Glucose-6-phosphate.

Application

Use Glucose-6-phosphate Dehydrogenase for the determination of blood glucose or creatine kinase. The chemical modification generates an increased liquid stability of the enzyme.

EC 1.1.1.49

Properties

Nomenclature: D-glucose-6-phosphate:NAD(P)$^+$ 1-oxidoreductase
Molecular weight: 110 kD (2 identical subunits 55,000 D)
Isoelectric point: pH 4.6
Michaelis constants (Tris: 0.1 mol/L; pH 7.8, +25°C)**:**
NAD: 1.4 x 10^{-4} mmol/L
NADP: 3.7 x 10^{-5} mmol/L
Glucose-6-P: 3.7 x 10^{-4} mmol/L (NAD as coenzyme)
Glucose-6-P: 2.0 x 10^{-4} mmol/L (NAD as coenzyme)
Activators/inhibitors:
Phosphate, 5 mmol/L: 100% (NAD), 80% (NADP)
Phosphate, 50 mmol/L: 100% (NAD), 80% (NADP)
Without Mg^{2+}: 90% (NAD), 80% (NADP)
Mg^{2+}, 3 mmol/L: 100% (NAD), 100% (NADP)
Mg^{2+}, 30 mmol/L: 100% (NAD), 100% (NADP)
HCO^{3-}, 3 mmol/L: 100% (NAD), 100% (NADP)
Inhibitors: NADPH is a competitive inhibitor in the NAD-dependent reaction. Unlike the yeast enzyme, myristic acid, dehydroepiandrosterone and palmitoyl CoA do not inhibit.
pH optimum: 7.8 (see figure for product Cat. No. 11 293 206 103)
Temperature dependence: See figure for product Cat. No. 11 293 206 103
pH stability: 5.0-10.0 (see figure for product Cat. No. 11 293 206 103)
Thermal stability: Up to +40°C for native G6P-DH, up to +50°C for modified G6P-DH (see figure for product Cat. No. 11 293 206 103)
Buffer stability: Temperature stability can be significantly improved by the increase of ionic strength (see figure for product Cat. No. 11 293 206 103).
Stability of the lyophilizate: 100% residual activity after 3 weeks at +35°C
Specificity: G6P-DH is highly specific for glucose-6-phosphate and does not react with fructose-6-P, fructose-1,6-P2 or glucose-1P. 2-Deoxyglucose-6-P is slowly oxidized with NAD (5%) and with NADP (4%).

Remark: The modified enzyme is especially suited for liquid stable applications with extended shelf life requirements.

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in water (c=40 mg/mL)
pH value (c=40 mg/mL in water): 6.5-7.5
Activity (+25°C, glucose-6-P, NAD): ≥30 U/mg lyophilizate
Activity (+30°C): ≥39 U/mg lyophilizate
Activity (+37°C): ≥54 U/mg lyophilizate
Contaminants (expressed as percentage of Glucose-6-phosphate Dehydrogenase activity):
ATPase: ≤0.02
Creatine kinase: ≤0.001
Glutamate dehydrogenase: ≤0.01
Glutathione reductase: ≤0.001
Hexokinase and Glucose dehydrogenase: ≤0.05
Myokinase: ≤0.05
''NADH oxidase'': ≤0.02
''NADPH oxidase'': ≤0.0005
6-Phosphogluconate dehydrogenase (NAD as coenzyme): ≤0.001
6-Phosphogluconate dehydrogenase (NADP as coenzyme): ≤0.001
Phophoglucose isomerase : ≤0.01
Phosphoglucomutase: ≤0.001
Glucose: ≤0.3 µg/mg lyophilizate
Stability: At +2 to +8°C within specification range for 18 months. Store dry.

Glucose-6-phosphate Dehydrogenase (G6P-DH)

from *Leuconostoc mesenteroides,* **expressed in** *E. coli*, **solution**

Catalog number	Pack size
11 650 742 103	custom fill

Will be supplied as "G6P-DH, Recombinant (E. coli)". Unit of measure is "MU".

For further processing only.

Recombinant dehydrogenase, that catalyzes the oxidation of Glucose-6-phosphate.

Application

Use Glucose-6-phosphate Dehydrogenase for the determination of blood glucose or creatine kinase.

EC 1.1.1.49

Properties

Nomenclature: D-glucose-6-phosphate:NAD(P)$^+$ 1-oxidoreductase
Molecular weight: 110 kD (1) (2 identical subunits 55,000 D)
Isoelectric point: pH 4.6
Michaelis constants (Tris: 0.1 mol/l; pH 7.8, +25°C)**:**

NAD: 1.4 x 10^{-4} mmol/L
NADP: 3.7 x 10^{-5} mmol/L
Glucose-6-P: 3.7 x 10^{-4} mmol/L (NAD as coenzyme)
Glucose-6-P: 2.0 x 10^{-4} mmol/L (NAD as coenzyme)
Activators/inhibitors:
Phosphate, 5 mmol/L: 100% (NAD), 80% (NADP)
Phosphate, 50 mmol/L: 100% (NAD), 80% (NADP)
Without Mg^{2+}: 90% (NAD), 80% (NADP)
Mg^{2+}, 3 mmol/L: 100% (NAD), 100% (NADP)
Mg^{2+}, 30 mmol/L: 100% (NAD), 100% (NADP)
HCO^{3-}, 3 mmol/L: 100% (NAD), 100% (NADP)
Inhibitors: NADPH is a competitive inhibitor in the NAD-dependent reaction. Unlike the yeast enzyme, myristic acid, dehydroepiandrosterone and palmitoyl CoA do not inhibit.
pH optimum: 7.8 (see figure for product Cat. No. 11 293 206 103)
Temperature dependence: See figure for product Cat. No. 11 293 206 103
pH stability: 5.0-10.0 (see figure for product Cat. No. 11 293 206 103)
Thermal stability: Up to +40°C for native G6P-DH, up to +50°C for modified G6P-DH (see figure for product Cat. No. 11 293 206 103)
Buffer stability: Temperature stability can be significantly improved by the increase of ionic strength (see figure for product Cat. No. 11 293 206 103).
Stability of the lyophilizate: 100% residual activity after 3 weeks at +35°C
Specificity: G6P-DH is highly specific for glucose-6-phosphate and does not react with fructose-6-P, fructose-1,6-P2 or glucose-1P. 2-Deoxyglucose-6-P is slowly oxidized with NAD (5%) and with NADP (4%).

Specification

Appearance: Clear, yellowish solution in glycerol
pH value: 6.0-7.0
Activity (+25°C, glucose-6-P): ≥2,500 U/mL
Activity (+30°C): ≥3,000 U/mL
Contaminants (expressed as percentage of Glucose-6-phosphate Dehydrogenase activity):
ATPase: ≤0.0200
Creatine kinase: ≤0.001
Glutamate dehydrogenase: ≤0.01
Glutathione reductase: ≤0.001
Hexokinase and Glucose dehydrogenase: ≤0.05
Myokinase: ≤0.01
''NADH oxidase'': ≤0.02
''NADPH oxidase'': ≤0.0005
Phosphoglucomutase: ≤0.001
6-Phosphogluconate dehydrogenase (NAD): ≤0.001
6-Phosphogluconate dehydrogenase (NADP): ≤0.001

Phophoglucose isomerase : ≤0.01
Glycerol (enzymatic): 45-55% (v/v)
Stability: At +2 to +8°C within specification range for 12 months.

Glucose-6-phosphate Dehydrogenase (G6P-DH)

from *Leuconostoc mesenteroides*, **lyophilizate**

Dehydrogenase, that catalyzes the oxidation of Glucose-6-phosphate.

Application

Use Glucose-6-phosphate Dehydrogenase for the determination of blood glucose or creatine kinase.

EC 1.1.1.49

Specification

Appearance: White or slightly yellowish lyophilizate
Solubility: Clear, colorless solution in water (c=10mg/mL)
pH value (c=10mg/mL in water): 6.5-7.5
Activity (+25°C, glucose-6-P): ≥400 U/mg lyophilizate
Activity (+30°C): ≥520 U/mg lyophilizate
Activity (+37°C): ≥720 U/mg lyophilizate
Contaminants (expressed as percentage of Glucose-6-phosphate Dehydrogenase activity):
ATPase: ≤0.02
Creatine kinase: ≤0.001
Glutamate dehydrogenase: ≤0.01
Glutathione reductase: ≤0.001
Hexokinase and Glucose dehydrogenase: ≤0.05
Myokinase: ≤0.05
''NADH oxidase'': ≤0.02
''NADPH oxidase'': ≤0.0005
Phosphoglucomutase: ≤0.001
6-Phosphogluconate dehydrogenase (NAD): ≤0.001
6-Phosphogluconate dehydrogenase (NADP): ≤0.001
Phophoglucose isomerase: ≤0.01
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

Catalog number	Pack size
10 186 783 103	custom fill

Will be supplied as "G6P-DH from Leuconostoc mesenteroides". Unit of measure is "kU".

For further processing only.

Glucose-6-phosphate Dehydrogenase (G6P-DH)

from *Leuconostoc mesenteroides*, **expressed in** *E. coli*, **reduced phosphate, lyophilizate**

Catalog number	Pack size
11 650 734 103	custom fill

Unit of measure is "MU".

For further processing only.

Recombinant dehydrogenase, that catalyzes the oxidation of Glucose-6-phosphate.

Application

Use Glucose-6-phosphate Dehydrogenase, reduced phosphate for the determination of inorganic phosphate in a colorimetric enzymatic reaction.

EC 1.1.1.49

Specification

Appearance: White to slightly yellowish lyophilizate
Solubility: Clear, colorless solution in water (c=10 mg/mL)
pH value (c=10mg/mL in water): 6.5-7.5
Activity (+25°C, glucose-6-P): ≥600 U/mg lyophilizate
Activity (+30°C): ≥750 U/mg lyophilizate
Activity (+37°C): ≥1,000 U/mg lyophilizate
Specific activity (+25°C, glucose-6-P): ≥800 U/mg
Protein (Biuret): 0.8-1.0 mg/mg lyophilizate
Contaminants (expressed as percentage of Glucose-6-phosphate Dehydrogenase activity):
ATPase: ≤0.00005
Creatine kinase: ≤0.001
Glutamate dehydrogenase: ≤0.01
Glutathione reductase: ≤0.001
α-Glucosidase: ≤0.00010
Hexokinase and glucose dehydrogenase: ≤0.05
Myokinase: ≤0.001
''NADH oxidase'': ≤0.02
''NADPH oxidase'': ≤0.0005
Phosphoglucomutase: ≤0.001
6-Phosphogluconate dehydrogenase (NAD): ≤0.001
6-Phosphogluconate dehydrogenase (NADP): ≤0.0001
Phophoglucose isomerase: ≤0.01
Phosphate (as P_i): ≤10 µg/mg lyophilizate
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

Glucose-6-phosphate Dehydrogenase (G6P-DH)

from *Leuconostoc mesenteroides*, **suspension**

Catalog number	Pack size
10 128 171 103	custom fill

Will be supplied as "G6P-DH from Leuconostoc mesenteroides". Unit of measure is "MU".

For further processing only.

Dehydrogenase, that catalyzes the oxidation of Glucose-6-phosphate.

Application

Use Glucose-6-phosphate Dehydrogenase for the determination of blood glucose or creatine kinase.

EC 1.1.1.49

Specification

Appearance: Yellowish suspension in ammonium sulfate
pH value: 5.5-6.5
Specific activity (+25°C, glucose-6-P): ≥550 U/mg
Specific activity (+30°C): ≥650 U/mg
Specific activity (+37°C): ≥800 U/mg
Protein (Biuret): ≥5 mg/mL
Contaminants (expressed as percentage of Glucose-6-phosphate Dehydrogenase activity):
ATPase: ≤0.02
Creatine kinase: ≤0.001
Glutamate dehydrogenase: ≤0.01
Glutathione reductase (NADH): ≤0.001
Hexokinase and Glucose dehydrogenase: ≤0.05
Myokinase: ≤0.05
''NADH oxidase'': ≤0.02
''NADPH oxidase'': ≤0.0005
Phosphoglucomutase: ≤0.001
6-Phosphogluconate dehydrogenase (NAD): ≤0.001
6-Phosphogluconate dehydrogenase (NADP): ≤0.001
Phophoglucose isomerase: ≤0.01
Stability: At +2 to +8°C within specification range for 18 months.

Glucose-6-phosphate Dehydrogenase (G6P-DH)

from yeast, lyophilizate

Catalog number	Pack size
10 190 454 103	custom fill

Will be supplied as ''Glucose-6-phosphate Dehydrogenase, Yeast''. Unit of measure is ''MU''.

For further processing only.

Dehydrogenase, that catalyzes the oxidation of Glucose-6-phosphate.

Application

Use Glucose-6-phosphate Dehydrogenase for the determination of blood glucose or creatine kinase.

EC 1.1.1.49

Specification

Appearance: White to slightly yellowish lyophilizate
Solubility: Clear, colorless solution in water (c=10 mg/mL)
pH value (c=10 mg/mL): 6.0-7.0
Activity (+25°C, glucose-6-P): ≥15.0 U/mg lyophilizate
Contaminants (expressed as percentage of Glucose-6-phosphate Dehydrogenase activity):
Creatine kinase: ≤0.001
Glutathione reductase: ≤0.05
Hexokinase: ≤0.02
Phosphoglucomutase: ≤0.01
6-Phosphogluconate dehydrogenase: ≤0.01
Phophoglucose isomerase: 0.002
Bioburden: ≤10,000 CFU/g
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

Glucose-6-phosphate Isomerase

from yeast, suspension

Catalog number	Pack size
10 154 334 103	custom fill

Will be supplied as ''Phosphoglucose Isomerase (PGI) from Yeast''. Unit of measure is ''MU''.

For further processing only.

Isomerase, that catalyzes the interconversion of glucose-6-phosphate into fructose 6-phosphate.

Application

Use Glucose-6-phosphate Isomerase for the isomerization of ketoses to aldoses and can be used for the determination of fructose.

EC 5.3.1.9

Specification

Appearance: White suspension in ammonium sulfate, 3.2 mol/L
Specific activity (+25°C, fructose-6-P): ≥350 U/mg protein
Protein (Biuret): 10±1 mg/mL
Contaminants (expressed as percentage of Glucose-6-phosphate Isomerase activity):
Fructose-6-phosphate kinase: ≤0.01
β-Fructosidase: ≤0.2
Glutathione reductase: ≤0.01
Phosphoglucomutase: ≤0.01
6-Phosphogluconate dehydrogenase: ≤0.01
Stability: At +2 to +8°C within specification range for 24 months.

α-Glucosidase

from yeast overproducer, multifunctional, lyophilizate

Catalog number	Pack size
11 626 329 103	custom fill

Will be supplied as "α-Glucosidase Multifunctional". Unit of measure is "MU".

For further processing only.

Recombinant glucosidase, that hydrolyzes 1,4-linked α-D-glucose residues with release of α-D-glucose.

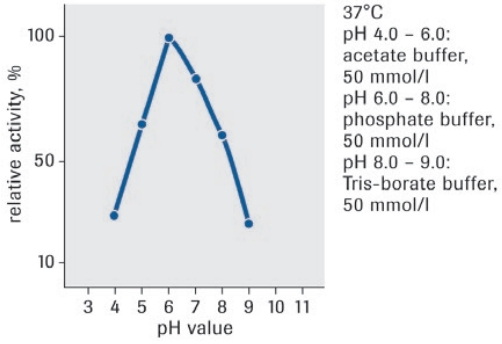
Application

Use α-Glucosidase in diagnostic tests for the determination of α-amylase and pancreatic α-amylase activity according to the recommendations of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC). It catalyzes the 100% liberation of p-nitrophenol residues from the amylase substrate EPS (Catalog No. 10 880 078 103) once it has been cleaved by α-amylase.

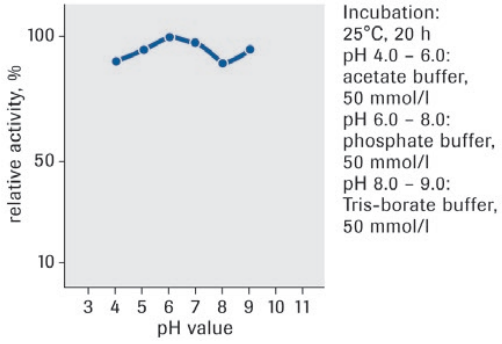
EC 3.2.1.20

Specification

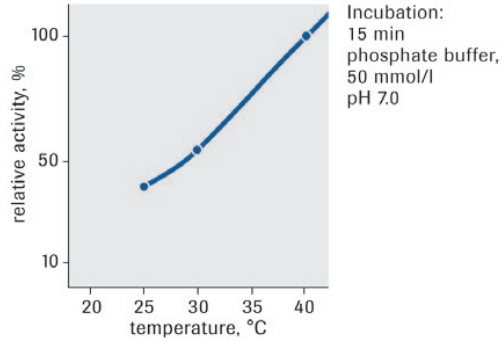
Appearance: White lyophilizate
Solubility: Clear, colorless solution in water (c=10 mg/mL)
pH value (c=10 mg/mL): 6.8-7.4
Activity (+37°C, 4-NP-α-D-glucoside): ≥60 U/mg lyophilizate
Specific activity: ≥130 U/mg protein
Protein (Biuret): 25-45 mg/100 mg lyophilizate
Contaminants (expressed as percentage of α-Glucosidase activity):
α-Amylase: ≤0.00001
Stability: At -15 to -25°C within specification range for 12 months. Store dry.



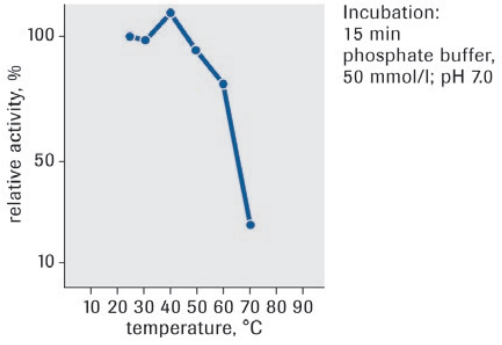
pH optimum



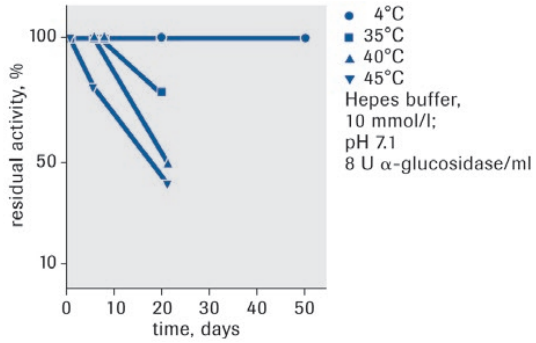
pH stability



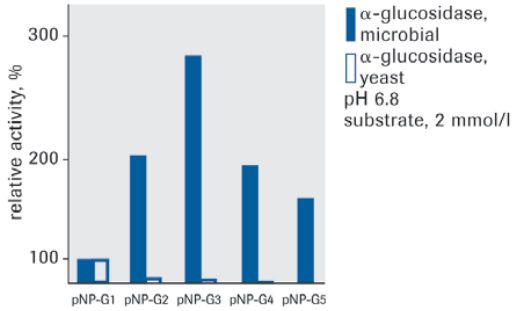
Temperature dependence



Thermal stability



Stability in solution



Substrate specificity

β-Glucuronidase

from *E.coli*, solution

Hydrolase that cleaves β-linked terminal glucuronic acid.

Application

Use β-Glucuronidase in reagents for drug monitoring and doping analysis where it catalyzes the hydrolysis of steroid conjugates to detect various steroids in urine.

EC 3.2.1.31

Specification

Appearance: Clear, colorless solution, partially with small particles
Specific activity (+25°C, 4-NP-glucuronide): ≥80 U/mg protein
Specific activity (+37°C, 4-NP-glucuronide): ≥140 U/mg protein
Protein (Biuret): ≥0.5 mg/mL solution
Stability: At +2 to +8°C within specification range for 18 months.

Catalog number	Pack size
03 708 446 103	custom fill

Will be supplied as "β-Glucuronidase *E.coli* K12 Glycerol". Unit of measure is "MU".

For further processing only.

Glutamate Dehydrogenase (NAD(P))

from *E.coli* overproducer, lyophilizate

Catalog number	Pack size
11 745 727 103	custom fill

Will be supplied as “GlDH, Lyo., rec.”. Unit of measure is “MU”.

For further processing only.

Recombinant glutamate dehydrogenase.

Application

Use recombinant Glutamate Dehydrogenase in diagnostic tests for the determination of ammonia, urea, L-glutamate, glutamate pyruvate transaminase and leucine aminopeptidase.

EC 1.4.1.3

Properties

Nomenclature: L-glutamate:NAD(P)$^+$ oxidoreductase (deaminating)
Molecular weight: ~2 200 kD for the associated enzyme with 8 subunits; 280 kD for one subunit.
Michaelis constants (Tris buffer, pH 8.0, +23°C):
L-glutamate: 1.8 x 10^{-3} mol/L
NADP: 4.7 x 10^{-5} mol/L
α-ketoglutarate: 7.0 x 10^{-4} mol/L
NH_4^+: 3.2 x 10^{-3} mol/L
NADPH: 2.6 x 10^{-5} mol/L
Km values for NAD or NADH are difficult to obtain due to their inhibitory action.
Inhibitors: 4-chloromercuribenzoate, Na_2S, diethyldithiocarbamate, 1,10-phenanthroline,
8-hydroxyquinoline, NaN_3, thyroxine, heparin, sulfonylcarbamides, Cu^{2+}, Hg^{2+}, Ag^{2+}, Fe^{3+}, Zn^{2+}, K^+, PO_4^{2-}, NO_3^-
Activators: Thioglycolic acid, b-mercaptoethylamine, EDTA, α, α’-dipyridyl
pH optimum: 8.0 (see figure for product Cat. No. 10 190 462 103)
Temperature dependence: See figure for product Cat. No. 10 190 462 103
pH stability: 5.5-6.5 (see figure for product Cat. No. 10 190 462 103)
Thermal stability: Up to +60°C (see figure for product Cat. No. 10 190 462 103)
Specificity: The oxidation of L-glutamate is stimulated by ADP and inhibited by GTP. In contrast, the oxidation of alanine, leucine, isoleucine, methionine, valine, norleucine, norvaline and 2-aminobutyrates is stimulated by GTP and inhibited by ADP.

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in water (c=20 mg/mL)
pH value (c=20 mg/L in water): 6.5-7.5
Activity (+25°C, α-ketoglutarat): ≥80 U/mg lyophilizate
Contaminants (expressed as percentage of Glutamate Dehydrogenase activity):
Alcohol dehydrogenase: ≤0.005
Lactate dehydrogenase: ≤0.005
Malate dehydrogenase: ≤0.005
''NADH-Oxidase'': ≤0.005
NH_4: ≤0.05 µg/mg lyophilizate
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

Glutamate Dehydrogenase (NAD(P))

from beef liver, lyophilizate

Catalog number	Pack size
10 190 462 103	custom fill

Will be supplied as ''Glutamate Dehydrogenase from Beef Liver''.
Unit of measure is ''MU''.

For further processing only.

Dehydrogenase that catalyzes the conversion of glutamate to α-ketoglutarate.

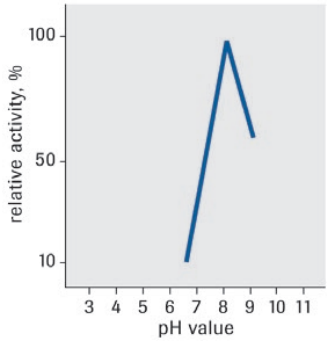
Application

Use Glutamate Dehydrogenase in diagnostic tests for the determination of ammonia, urea, L-glutamate, glutamate pyruvate transaminase and leucine aminopeptidase.

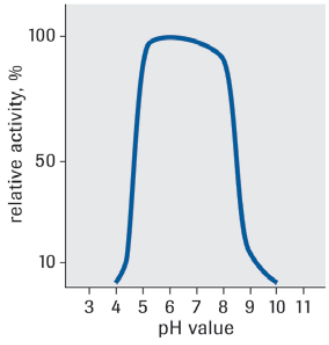
EC 1.4.1.3

Properties

Nomenclature: L-glutamate:NAD(P)$^+$ oxidoreductase (deaminating)
Molecular weight: ~2 200 kD for the associated enzyme with 8 subunits; 280 kD for one subunit.
Michaelis constants (Tris buffer, pH 8.0, +23°C):
L-glutamate: 1.8 x 10^{-3} mol/L
NADP: 4.7 x 10^{-5} mol/L
α-ketoglutarate: 7.0 x 10^{-4} mol/L
NH_4^+: 3.2 x 10^{-3} mol/L
NADPH: 2.6 x 10^{-5} mol/L
Km values for NAD or NADH are difficult to obtain due to their inhibitory action.
Inhibitors: 4-chloromercuribenzoate, Na_2S, diethyldithiocarbamate, 1,10-phenanthroline,
8-hydroxyquinoline, NaN_3, thyroxine, heparin, sulfonylcarbamides, Cu^{2+}, Hg^{2+}, Ag^{2+}, Fe^{3+}, Zn^{2+}, K^+, PO_4^{2-}, NO_3^-
Activators: Thioglycolic acid, b-mercaptoethylamine, EDTA, α, α'-dipyridyl
pH optimum: 8.0 (see figure)



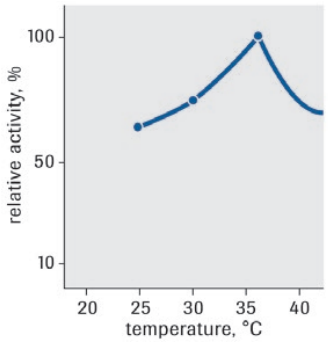
pH optimum



Incubation:
25°C, 180 min
pH 3.0 – 5.0:
citrate buffer, 0.1 mol/l
pH 6.0 – 8.0:
phosphate buffer, 0.1 mol/l
pH 9.0 – 11.0:
glycine buffer, 0.1 mol/l
120 U GIDH/ml

pH stability

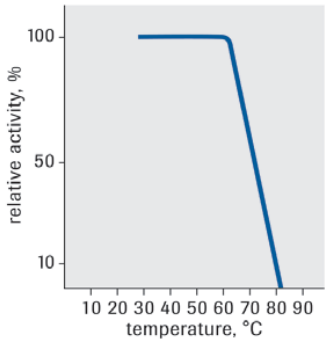
Temperature dependence: See figure
pH stability: 5.5-6.5 (see figure)
Thermal stability: Up to +60°C (see figure)
Specificity: The oxidation of L-glutamate is stimulated by ADP and inhibited by GTP. In contrast, the oxidation of alanine, leucine, isoleucine, methionine, valine, norleucine, norvaline and 2-aminobutyrates is stimulated by GTP and inhibited by ADP.
Remarks:
- Glutamate dehydrogenase suspension or solution can be dialyzed against phosphate buffer, 10 mmol/L. Glutamate dehydrogenase molecules have the tendency to associate in some test formulations, modified Glutamate dehydrogenase minimizes this effect.



Temperature dependence

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless to slightly opalescent solution in water (c=20 mg/mL)
pH value (c=20 mg/mL in water): 6.5-7.5
Activity (+25°C, α-oxoglutarat): ≥10 U/mg lyophilizate
Contaminants (expressed as percentage of Glutamate Dehydrogenase activity):
Alcohol dehydrogenase: ≤0.005
Lactate dehydrogenase: ≤0.005
Malate dehydrogenase: ≤0.005
NH_4: ≤0.1 µg/mg lyophilizate
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 18 months. Store dry.



Thermal stability

Glutamate Dehydrogenase (NAD(P))

from beef liver, chemically modified, lyophilizate

Catalog number	Pack size
11 434 993 103	custom fill

Will be supplied as “GlDH, Modified from Beef Liver”. Unit of measure is “MU”.

For further processing only.

Dehydrogenase that catalyzes the conversion of glutamate to α-ketoglutarate.

Application

Use modified Glutamate Dehydrogenase in diagnostic tests for the determination of ammonia, urea, L-glutamate, glutamate pyruvate transaminase and leucine aminopeptidase.

EC 1.4.1.3

Properties

Nomenclature: L-glutamate:NAD(P)$^+$ oxidoreductase (deaminating)
Molecular weight: ~2 200 kD for the associated enzyme with 8 subunits; 280 kD for one subunit.
Michaelis constants (Tris buffer, pH 8.0, +23°C):
L-glutamate: 1.8 x 10^{-3} mol/L
NADP: 4.7 x 10^{-5} mol/L
α-ketoglutarate: 7.0 x 10^{-4} mol/L
NH_4^+: 3.2 x 10^{-3} mol/L
NADPH: 2.6 x 10^{-5} mol/L
Km values for NAD or NADH are difficult to obtain due to their inhibitory action.
Inhibitors: 4-chloromercuribenzoate, Na_2S, diethyldithiocarbamate, 1,10-phenanthroline,
8-hydroxyquinoline, NaN_3, thyroxine, heparin, sulfonylcarbamides, Cu^{2+}, Hg^{2+}, Ag^{2+}, Fe^{3+}, Zn^{2+}, K^+, PO_4^{2-}, NO_3^-
Activators: Thioglycolic acid, b-mercaptoethylamine, EDTA, α, α’-dipyridyl
pH optimum: 8.0 (see figure for product Cat. No. 10 190 462 103)
Temperature dependence: See figure for product Cat. No. 10 190 462 103
pH stability: 5.5-6.5 (see figure for product Cat. No. 10 190 462 103)
Thermal stability: Up to +60°C (see figure for product Cat. No. 10 190 462 103)
Specificity: The oxidation of L-glutamate is stimulated by ADP and inhibited by GTP. In contrast, the oxidation of alanine, leucine, isoleucine, methionine, valine, norleucine, norvaline and 2-aminobutyrates is stimulated by GTP and inhibited by ADP.
Remarks:
- Glutamate dehydrogenase suspension or solution can be dialyzed against phosphate buffer, 10 mmol/L. Glutamate dehydrogenase molecules have the tendency to associate in some test formulations, modified Glutamate dehydrogenase minimizes this effect.
-The modified enzyme is especially suited for liquid stable applications with extended shelf life requirements.

Specification

Appearance: White lyophilizate, stabilized with RPLA 4 and ADP
Solubility: Clear, slightly opalescent solution in water (c=40 mg/mL)
Activity (+25°C, α-oxoglutarat): ≥7 U/mg lyophilizate
Contaminants (expressed as percentage of Glutamate Dehydrogenase activity):
Alcohol dehydrogenase: ≤0.005
Lactate dehydrogenase: ≤0.005
Malate dehydrogenase: ≤0.005
NH_4: ≤0.16 µmol/KU Glutamate Dehydrogenase
K (flame photometric): ≤0.1 µmol/KU Glutamate Dehydrogenase
Na (flame photometric): ≤2.0 µmol/KU Glutamate Dehydrogenase
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 18 months.
Store dry.

Glutamate Dehydrogenase (NAD(P))

from beef liver, solution

Catalog number	Pack size
10 120 847 103	custom fill

Will be supplied as "Glutamate Dehydrogenase, Beef Liver". Unit of measure is "L".

For further processing only.

Dehydrogenase that catalyzes the conversion of glutamate to α-ketoglutarate.

Application

Use Glutamate Dehydrogenase in diagnostic tests for the determination of ammonia, urea, L-glutamate, glutamate pyruvate transaminase and leucine aminopeptidase.

EC 1.4.1.3

Properties

Nomenclature: L-glutamate:NAD(P)$^+$ oxidoreductase (deaminating)
Molecular weight: ~2 200 kD for the associated enzyme with 8 subunits; 280 kD for one subunit.
Michaelis constants (Tris buffer, pH 8.0, +23°C):
L-glutamate: 1.8 x 10^{-3} mol/L
NADP: 4.7 x 10^{-5} mol/L
α-ketoglutarate: 7.0 x 10^{-4} mol/L
NH_4^+: 3.2 x 10^{-3} mol/L
NADPH: 2.6 x 10^{-5} mol/L
Km values for NAD or NADH are difficult to obtain due to their inhibitory action.
Inhibitors: 4-chloromercuribenzoate, Na_2S, diethyldithiocarbamate, 1,10-phenanthroline,
8-hydroxyquinoline, NaN_3, thyroxine, heparin, sulfonylcarbamides, Cu^{2+}, Hg^{2+}, Ag^{2+}, Fe^{3+}, Zn^{2+}, K^+, PO_4^{2-}, NO_3^-

Activators: Thioglycolic acid, b-mercaptoethylamine, EDTA, α, α'-dipyridyl
pH optimum: 8.0 (see figure for product Cat. No. 10 190 462 103)
Temperature dependence: See figure for product Cat. No. 10 190 462 103
pH stability: 5.5-6.5 (see figure for product Cat. No. 10 190 462 103)
Thermal stability: Up to +60°C (see figure for product Cat. No. 10 190 462 103)
Specificity: The oxidation of L-glutamate is stimulated by ADP and inhibited by GTP. In contrast, the oxidation of alanine, leucine, isoleucine, methionine, valine, norleucine, norvaline and 2-aminobutyrates is stimulated by GTP and inhibited by ADP.
Remarks: GIDH suspension or solution can be dialyzed against phosphate buffer, 10 mmol/L. GIDH molecules have the tendency to associate in some test formulations, modified GIDH minimizes this effect.

Specification

Appearance: Clear, colourless solution in glycerol
pH value: 7.0-7.8
Specific Activity: ≥120 U/mg
Protein (Biuret): 30±3 mg/mL
Contaminants (expressed as percentage of Glutamate Dehydrogenase activity):
Alcohol dehydrogenase: ≤0.01
Lactate dehydrogenase: ≤0.01
Malate dehydrogenase: ≤0.01
NH_4: ≤0.16 µg/mg protein
Glycerol: 560-680 mg/mL (45-55% (v/v))
EDTA (complexometric): 12.2-13.4 mmol/L
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 18 months.

γ-Glutamyltransferase

from hog kidney, lyophilizate

Catalog number	Pack size
10 445 363 103	custom fill

Will be supplied as "γ-Glutamyltransferase from Hog Kidney". Unit of measure is "kU".

For further processing only.

Application

Use γ-Glutamyltransferase for designing your calibrator or control reagent.

EC 2.3.2.2

Specification

Appearance: White/off white to buff lyophilizate
Solubility: Clear, colorless to brownish solution in water (c=10 mg/mL)
Activity (+37°C, with γ-GT kit): >23 U/mg lyophilizate
Contaminants (expressed as percentage of γ-Glutamyltransferase activity):
Leucine aminopeptidase: <0.10
Phosphatase, alkaline: <2
''NADH oxidase'': ≤0.01
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

Glycerol Kinase (GK)

from *Bacillus stearothermophilus*, lyophilizate

Catalog number	Pack size
11 499 530 103	custom fill

Will be supplied as "GK, B.stearot., Lyo., w. Lactose". Unit of measure is "MU".

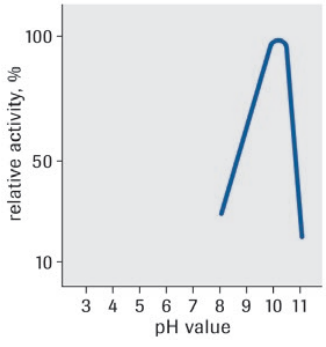
For further processing only.

Enzyme that catalyzes the phosphorylation of glycerol to glycerol-3-phosphate.

Application

Use Glycerol Kinase for diagnostic tests for the determination of triglycerides together with Glycerol-3-phosphate Oxidase, Catalog Nos. 11 582 003 103 and 11 654 730 103, and Lipoprotein Lipase, Catalog No. 11 145 991 103.

EC 2.7.1.30



pH optimum

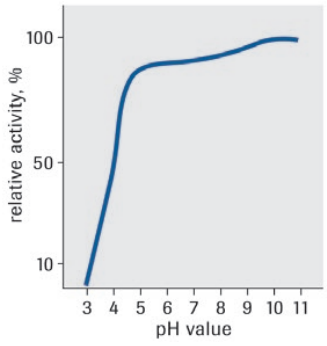
Properties

Nomenclature: ATP:glycerol 3-phosphotransferase
Molecular weight: 230 000 D (Sephadex G 200), 4 x 58 000 D (SDS-gel electrophoresis)
Michaelis constants (Glycine buffer, pH 9.8; +30°C):
Glycerol: 4.4 x 10^{-5} mol/L
Inhibitors: Unknown; Inhibitors of glycerokinase from *Candida mycoderma* do not inhibit the glycerokinase from *Bacillus stearothermophilus*.

pH optimum: 10.0-10.5 (see figure)
Temperature dependence: See figure
pH stability: 5.0-11.0 (see figure)
Thermal stability: Up to +60° C (see figure)

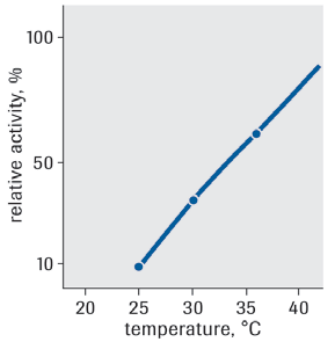
Specification

Appearance: White to slightly yellowish lyophilizate
Solubility: Clear, colorless solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 5.0-7.0
Activity (+25°C, glycerol): 18-25 U/mg lyophilizate
Specific activity: ≥80 U/mg protein
Protein (Biuret): 0.18-0.26 mg/mg lyophilizate
Contaminants (expressed as percentage of Glycerol Kinase activity):
ATPase: ≤0.005
Hexokinase: ≤0.01
"NADH oxidase": ≤0.005
Glycerol (enzymatic): ≤40 µg/kU
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

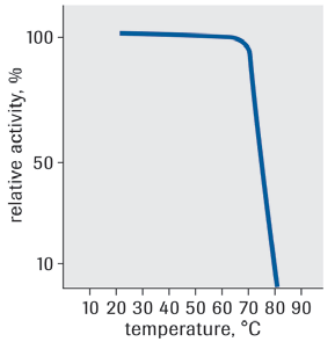


Incubation:
25°C, 180 min
pH 3.0 – 5.0:
citrate buffer, 0.1 mol/l
pH 6.0 – 8.0:
phosphate buffer,
0.1 mol/l
pH 9.0 – 11.0:
glycine buffer, 0.1
mol/l
85 U GK/ml

pH stability



Temperature dependence



Incubation:
10 min
Tris buffer, 0.1 mol/l;
pH 9.0
510 U GK/ml

Thermal stability

Glycerol Kinase (GK)

from *Bacillus stearothermophilus*, **solution**

Catalog number	Pack size
10 691 666 103	custom fill

Will be supplied as ''Glycerokinase from Bac.stearothermophil.''. Unit of measure is ''kU''.

For further processing only.

Enzyme that catalyzes the phosphorylation of glycerol to glycerol-3-phosphate.

Application

Use Glycerol Kinase for diagnostic tests for the determination of triglycerides together with Glycerol-3-phosphate Oxidase, Catalog Nos. 11 582 003 103 and 11 654 730 103, and Lipoprotein Lipase, Catalog No. 11 145 991 103.

EC 2.7.1.30

Properties

Nomenclature: ATP:glycerol 3-phosphotransferase
Molecular weight: 230 000 D (Sephadex G 200), 4 x 58 000 D (SDS-gel electrophoresis)
Michaelis constants (Glycine buffer, pH 9.8; +30°C):
Glycerol: 4.4 x 10^{-5} mol/L
Inhibitors: Unknown; Inhibitors of glycerokinase from *Candida mycoderma* do not inhibit the glycerokinase from *Bacillus stearothermophilus*.
pH optimum: 10.0–10.5 (see figure for product Cat. No. 11 499 530 103)
Temperature dependence: See figure for product Cat. No. 11 499 530 103
pH stability: 5.0-11.0 (see figure for product Cat. No. 11 499 530 103)
Thermal stability: Up to +60° C (see figure for product Cat. No. 11 499 530 103)

Specification

Appearance: Clear, colorless to slightly yellowish solution in Tris buffer; pH approximately 7.3, stabilized, potential particles as result of recristallized salts
Activity (+25°C, glycerol): ≥500 U/mL
Specific activity: ≥85 U/mg protein
Protein (Biuret): No limit
Contaminants (expressed as percentage of Glycerol Kinase activity):
Hexokinase: ≤0.01
"NADH oxidase": ≤0.005
Stability: At +2 to +8°C within specification range for 12 months.

Glycerol Kinase (GK), concentrated

from *Bacillus stearothermophilus*, **solution**

Catalog number	Pack size
10 539 937 103	custom fill

Will be supplied as “Glycerokinase, Bac. stearothermophilus”. Unit of measure is “MU”.

For further processing only.

Enzyme that catalyzes the phosphorylation of glycerol to glycerol-3-phosphate.

Application

Use Glycerol Kinase for diagnostic tests for the determination of triglycerides together with Glycerol-3-phosphate Oxidase, Catalog Nos. 11 582 003 103 and 11 654 730 103, and Lipoprotein Lipase, Catalog No. 11 145 991 103.

EC 2.7.1.30

Properties

Nomenclature: ATP:glycerol 3-phosphotransferase
Molecular weight: 230 000 D (Sephadex G 200), 4 x 58 000 D (SDS-gel electrophoresis)
Michaelis constants (Glycine buffer, pH 9.8; +30°C):
Glycerol: 4.4 x 10^{-5} mol/L
Inhibitors: Unknown; Inhibitors of glycerokinase from *Candida mycoderma* do not inhibit the glycerokinase from *Bacillus stearothermophilus*.
pH optimum: 10.0-10.5 (see figure for product Cat. No. 11 499 530 103)
Temperature dependence: See figure for product Cat. No. 11 499 530 103
pH stability: 5.0-11.0 (see figure for product Cat. No. 11 499 530 103)
Thermal stability: Up to +60° C (see figure for product Cat. No. 11 499 530 103)

Specification

Appearance: Clear, colorless to slightly yellowish solution in Tris buffer; pH approximately 7.3, stabilized, potential particles as result of recristallized salts
pH value (c=10 mg/mL, in water): 7.1-7.5
Activity (+25°C, glycerol): ≥2,200 U/mL
Specific activity: ≥85 U/mg protein
Protein (Biuret): No limit
Contaminants (expressed as percentage of Glycerol Kinase activity):
Hexokinase: ≤0.01
“NADH oxidase”: ≤0.005
Stability: At +2 to +8°C within specification range for 12 months.

Glycerol-3-phosphate Dehydrogenase

from rabbit muscle, suspension

Catalog number	Pack size
10 151 351 103	custom fill

Will be supplied as ''GDH from Rabbit Muscle''. Unit of measure is ''MU''.

For further processing only.

Dehydrogenase that catalyzes the interconversion of dihydroxyacetone phosphate to glycerol 3-phosphate.

Application

Use Glycerol-3-phosphate Dehydrogenase in diagnostic reagents for the determination of aldolase in combination with Triose-phosphate Isomerase, Catalog No. 10 153 338 103.

EC 1.1.1.8

Specification

Appearance: White suspension in ammonium sulfate, 3.2 mol/L, pH approximately 6
pH value: 5.5-6.5
Activity: ≥2,000 U/mL solution
Specific activity (+25°C, glyceraldehyde-3-phosphate): ≥170 U/mg protein
Protein (Biuret): 10 mg/mL
Ammonium sulfate: 3.2±0.2 mol/L
Contaminants (expressed as percentage of Glycerol-3-phosphate Dehydrogenase activity):
Aldolase: ≤0.001
Glyceraldehyde-3-phosphate dehydrogenase: ≤0.001
Lactate dehydrogenase: ≤0.01
Triose-phosphate isomerase: ≤0.01
Stability: At +2 to +8°C within specification range for 18 months.

Glycerol-3-phosphate Oxidase

from *E.coli* overproducer, lyophilizate

Catalog number	Pack size
11 654 730 103	custom fill

Will be supplied as "L-a-Glycerol-phosphate Oxidase, rec., Lyo.". Unit of measure is "MU".
Additional formulation: Lyophilizate, Catalog No. 11 582 003 103

For further processing only.

Recombinant oxidoreductase that catalyzes the interconversion of glycerol 3-phosphate to dihydroxyacetone phosphate.

Application

Use Glycerol-3-phosphate Oxidase in diagnostic tests for the determination of triglycerides together with Glycerol Kinase, Catalog Nos. 10 539 937 103 or 11 499 530 103 and Lipoprotein Lipase, Catalog No. 11 145 991 103.

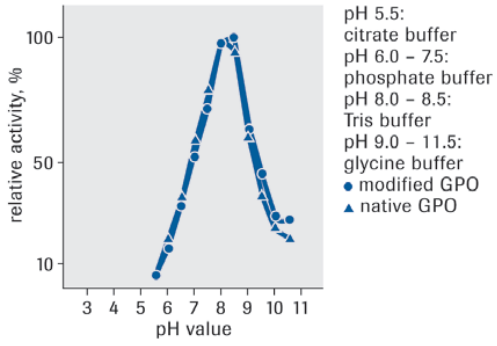
EC 1.1.3.21

Properties

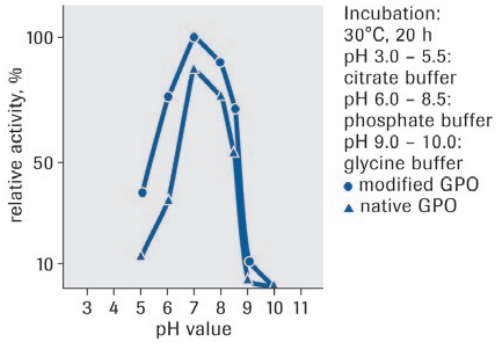
Nomenclature: Glycerol-3-phosphate : oxygen oxidoreductase
Molecular weight: 75 kD (SDS-PAGE); 74 kD (gel filtration, Sephadex G 150)
Isoelectric point: ~4.2 (230 000 D (Sephadex G 200), 4 x 58 000 D (SDS-gel electrophoresis))
Michaelis constants (L-glycerol phosphate):
K-phosphate buffer, 0.1 mol/L; pH 7.5: 1.36 x 10^{-2} mol/L(o-dianisidine assay)
Tris buffer, 0.1 mol/L; pH 7.6: 2.90 x 10^{-3} mol/L (o-dianisidine assay)
Tris buffer, 0.1 mol/L; pH 8.1: 1.40 x 10^{-3} mol/L (PAP assay)
Structure: Monomeric protein with FAD as cofactor
Inhibitors: Ag, Hg-salts and SDS
pH optimum: 8.0-8.5 (see figure)
Temperature dependence: See figure
pH stability: 6.5-8.5 (see figure)
Thermal stability: See figure
Specificity: Glycerol phosphate oxidase reacts highly specific with L-α-glycerol phosphate.

Specification

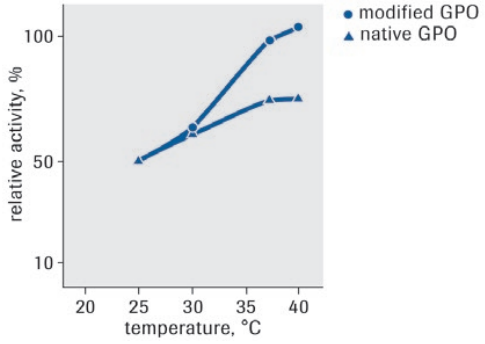
Appearance: Greenish yellow lyophilizate
Solubility: Clear yellow solution in Tris/HCl, 150 mmol/l, pH 7.6 (c=10 mg/ml)
Activity (+25°C, L-α-glycerol-3-phosphate): ≥50 U/mg lyophilizate
Activity (+37°C): ≥90 U/mg lyophilizate
Contaminants (expressed as percentage of Glycerol-3-phosphate Oxidase activity):
Cholesterol oxidase: ≤0.001
Lactate oxidase: ≤0.002
Uricase: ≤0.001
Stability: At +2 to +8°C within specification range for 12 months. Store dry.



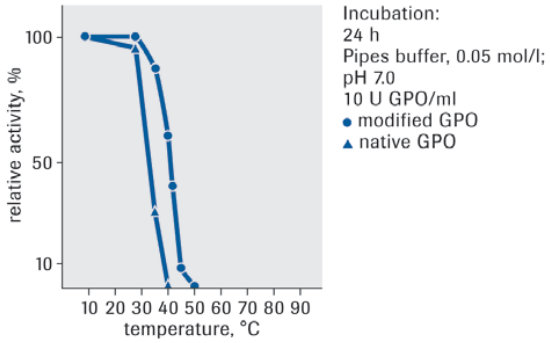
pH optimum



pH stability



Temperature dependence



Thermal stability

Glycerol-3-phosphate Oxidase, chemically modified

from *E.coli* overproducer, lyophilizate

Recombinant oxidoreductase that catalyzes the interconversion of glycerol 3-phosphate to dihydroxyacetone phosphate.

Catalog number	Pack size
11 582 003 103	custom fill

Will be supplied as "L-Glycerol-3-phosphate Oxidase rec. mod.".
Unit of measure is "MU".
Additional formulation: Lyophilizate, Catalog No. 11 654 730 103

For further processing only.

Application

Use Glycerol-3-phosphate Oxidase in diagnostic tests for the determination of triglycerides together with Glycerol Kinase, Catalog Nos. 10 539 937 103 or 11 499 530 103 and Lipoprotein Lipase, Catalog No. 11 145 991 103.

EC 1.1.3.21

Properties

Nomenclature: Glycerol-3-phosphate : oxygen oxidoreductase
Molecular weight: 75 kD (SDS-PAGE); 74 kD (gel filtration, Sephadex G 150)
Isoelectric point: ~4.2 (230 000 D (Sephadex G 200), 4 x 58 000 D (SDS-gel electrophoresis))
Michaelis constants (L-glycerol phosphate):
K-phosphate buffer, 0.1 mol/L; pH 7.5: 1.36 x 10^{-2} mol/L (o-dianisidine assay)
Tris buffer, 0.1 mol/L; pH 7.6: 2.90 x 10^{-3} mol/L (o-dianisidine assay)
Tris buffer, 0.1 mol/L; pH 8.1: 1.40 x 10^{-3} mol/L (PAP assay)
Structure: Monomeric protein with FAD as cofactor
Inhibitors: Ag, Hg-salts and SDS
pH optimum: 8.0-8.5 (see figure for product Cat. No. 11 654 730 103)
Temperature dependence: See figure for product Cat. No. 11 654 730 103
pH stability: 6.5-8.5 (see figure for product Cat. No. 11 654 730 103)
Thermal stability: See figure for product Cat. No. 11 654 730 103

Specificity: Glycerol phosphate oxidase reacts highly specific with L-α-glycerol phosphate.

Specification

Appearance: Green-yellow amorphous lyophilizate
Solubility: Clear yellow solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 6.8-7.8
Activity (+25°C, L-α-glycerol phosphate): ≥5 U/mg lyophilizate
Activity (+37°C, L-α-glycerol phosphate): ≥10 U/mg lyophilizate
Specific activity (+25°C): ≥40 U/mg protein
Protein (BCA): ≥0.1 mg/mg lyophilizate
Contaminants (expressed as percentage of Glycerol-3-phosphate Oxidase activity):
Cholesterol oxidase: ≤0.001
Lactate oxidase: ≤0.002
Uricase: ≤0.05
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

Hexokinase (HK)

from yeast overproducer, lyophilizate

Catalog number	Pack size
11 119 796 103	custom fill

Will be supplied as ''Hexokinase (HK) from Yeast Overproducer''. Unit of measure is ''MU''.

For further processing only.

Recombinant enzyme that converts hexose to hexose-6-phosphate.

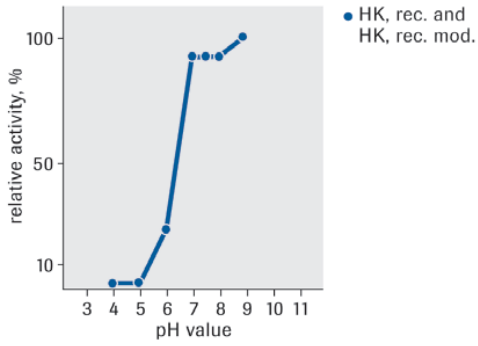
Application

Use Hexokinase in diagnostic tests for blood glucose using the hexokinase method and for the determination of creatine kinase.

EC 2.7.1.1

Properties

Nomenclature: ATP:D-hexose 6-phosphotransferase
Molecular weight: 57 kD (SDS-PAGE)
Isoelectric point: 4.5-5.0
Michaelis constants (D-glucose)**:**
Phosphate buffer, 0.1 mol/L, pH 7.0; +25°C: 3.05 x 10^{-4} mol/L
Phosphate buffer, 0.1 mol/L, pH 7.4; +30°C: 1.90 x 10^{-4} mol/L
Tea buffer, 0.1 mol/L, pH 7.6; +25°C: 2.30 x 10^{-4} mol/L
Michaelis constants (ATP):
Tris buffer, 0.1 mol/L, pH 7.6; +28°C: 1.60 x 10^{-4} mol/L
Tea buffer, 0.1 mol/L, pH 7.6; +25°C: 1.90 x 10^{-4} mol/L
Inhibitors: EDTA, SH-blocking compounds, sorbose-1-phosphate, polyphosphates, 6-deoxy-6-fluoroglucose, 2-C-hydroxymethylglucose, lyxose.
Activators: Mg^{2+}, catecholamines
pH optimum: 7.0-10.0 (see figure)

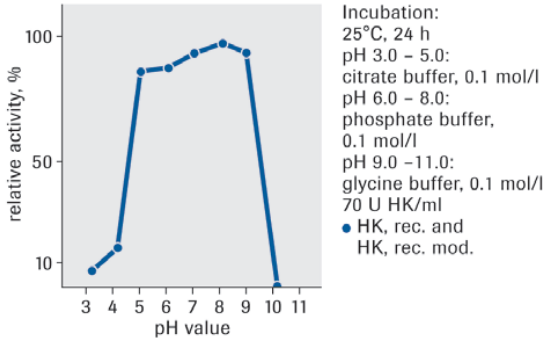


pH optimum

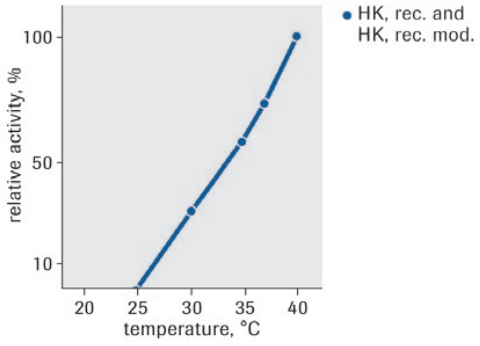
Temperature dependence: See figure
pH stability: 5.0-9.0 (see figure)
Thermal stability: 100% for 20 minutes at +37°C, 50% for 20 minutes at +45°C, 75% for 5 hours at +37°C (see figures)
Specificity: Hexokinase phosphorylates D-glucose, D-fructose, D-mannose, D-glucosamin, 2-deoxyglucose. L-Arabinose, D-xylose, L-rhamnose, D-galactose, D-lactose, sucrose, maltose, trehalose, raffinose, N-acetyl glucosamine do not react. ATP can be partially replaced by other nucleotides.

Specification

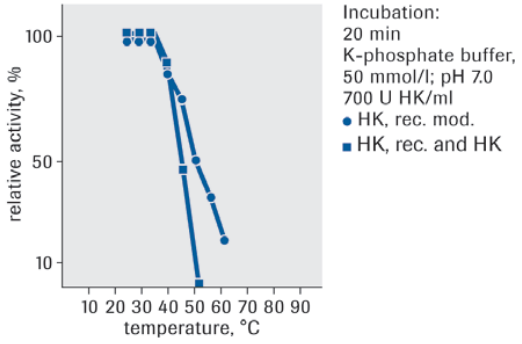
Appearance: Yellowish lyophilizate
Solubility: Clear, colorless solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 6.5-7.5
Activity (+25°C, glucose): ≥70 U/mg lyophilizate
Activity (+30°C): ≥98 U/mg lyophilizate
Activity (+37°C): ≥115 U/mg
Protein (Biuret): 0.15±0.05 mg/mg lyophilizate
Contaminants (expressed as percentage of Hexokinase activity):
Alcohol dehydrogenase: ≤0.001
ATPase: ≤0.05
Creatine kinase: ≤0.001
G6P-DH: ≤0.005
Glutamate dehydrogenase: ≤0.05
Glutathione reductase: ≤0.005
Myokinase: ≤0.001
''NADH oxidase'': ≤0.001
''NADPH oxidase'': ≤0.001
6-Phosphogluconate dehydrogenase: ≤0.001
Phophoglucose isomerase: ≤0.002
Phosphoglucomutase: ≤0.02
Stability: At +2 to +8°C within specification range for 18 months. Store dry.



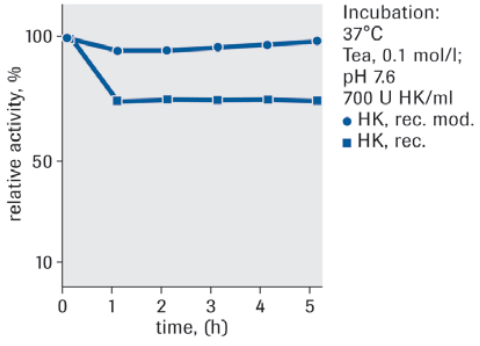
pH stability



Temperature dependence



Thermal stability



Thermal stability

Hexokinase (HK), chemically modified

from yeast overproducer, lyophilizate

Catalog number	Pack size
11 370 600 103	custom fill

Will be supplied as “Hexokinase (HK) from Rec.Yeast, Modif.”. Unit of measure is “MU”.

For further processing only.

Recombinant enzyme that converts hexose to hexose-6-phosphate.

Application

Use Hexokinase in diagnostic tests for blood glucose using the hexokinase method and for the determination of creatine kinase. The chemical modification generates an increased liquid stability of the enzyme.

EC 2.7.1.1

Properties

Nomenclature: ATP:D-hexose 6-phosphotransferase
Molecular weight: 57 kD (SDS-PAGE)
Isoelectric point: 4.5-5.0
Michaelis constants (D-glucose)**:**
Phosphate buffer, 0.1 mol/L, pH 7.0; +25°C: 3.05 x 10^{-4} mol/L
Phosphate buffer, 0.1 mol/L, pH 7.4; +30°C: 1.90 x 10^{-4} mol/L
Tea buffer, 0.1 mol/L, pH 7.6; +25°C: 2.30 x 10^{-4} mol/L
Michaelis constants (ATP):
Tris buffer, 0.1 mol/L, pH 7.6; +28°C: 1.60 x 10^{-4} mol/L
Tea buffer, 0.1 mol/L, pH 7.6; +25°C: 1.90 x 10^{-4} mol/L
Inhibitors: EDTA, SH-blocking compounds, sorbose-1-phosphate, polyphosphates, 6-deoxy-6-fluoroglucose, 2-C-hydroxymethylglucose, lyxose.
Activators: Mg^{2+}, catecholamines
pH optimum: 7.0-10.0 (see figure for product Cat. No. 11 119 796 103)
Temperature dependence: See figure for product Cat. No. 11 119 796 103
pH stability: 5.0-9.0 (see figure for product Cat. No. 11 119 796 103)
Thermal stability: See figure for product Cat. No. 11 119 796 103
Specificity: Hexokinase phosphorylates D-glucose, D-fructose, D-mannose, D-glucosamin, 2-deoxyglucose. L-Arabinose, D-xylose, L-rhamnose, D-galactose, D-lactose, sucrose, maltose, trehalose, raffinose, N-acetyl glucosamine do not react. ATP can be partially replaced by other nucleotides.

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in water (c=40 mg/mL)
pH value (c=40 mg/mL in water): 6.5-7.5
Activity (+25°C, glucose): ≥40 U/mg lyophilizate
Contaminants (expressed as percentage of hexokinase activity):
Alcohol dehydrogenase: ≤0.001
ATPase: ≤0.05
Creatine kinase: ≤0.001
G6P-DH: ≤0.005
Glutamate dehydrogenase: ≤0.05
Glutathione reductase: ≤0.005
Myokinase: ≤0.001
''NADH oxidase'': ≤0.001
6-Phosphogluconate dehydrogenase: ≤0.001
Phophoglucose isomerase: ≤0.002
Phosphoglucomutase: ≤0.02
Glucose: ≤0.3 µg/mg lyophilizate
Stability: At +2 to +8°C within specification range for 18 months.
Remark: This enzyme is especially suited for liquid stable applications with extended shelf life requirements.

Hexokinase (HK)

from yeast overproducer, solution

Recombinant enzyme that converts hexose to hexose-6-phosphate.

Catalog number	Pack size
11 149 130 103	custom fill

Will be supplied as "Hexokinase (HK) from Recombinant Yeast". Unit of measure is "MU".

For further processing only.

Application

Use Hexokinase in diagnostic tests for blood glucose using the hexokinase method and for the determination of creatine kinase.

EC 2.7.1.1

Properties

Nomenclature: ATP:D-hexose 6-phosphotransferase
Molecular weight: 57 kD (SDS-PAGE)
Isoelectric point: 4.5-5.0
Michaelis constants (D-glucose)**:**
Phosphate buffer, 0.1 mol/L, pH 7.0; +25°C: 3.05 x 10^{-4} mol/L
Phosphate buffer, 0.1 mol/L, pH 7.4; +30°C: 1.90 x 10^{-4} mol/L
Tea buffer, 0.1 mol/L, pH 7.6; +25°C: 2.30 x 10^{-4} mol/L
Michaelis constants (ATP):
Tris buffer, 0.1 mol/L, pH 7.6; +28°C: 1.60 x 10^{-4} mol/L
Tea buffer, 0.1 mol/L, pH 7.6; +25°C: 1.90 x 10^{-4} mol/L

Inhibitors: EDTA, SH-blocking compounds, sorbose-1-phosphate, polyphosphates, 6-deoxy-6-fluoroglucose, 2-C-hydroxymethylglucose, lyxose.
Activators: Mg^{2+}, catecholamines
pH optimum: 7.0-10.0 (see figure for product Cat. No. 11 119 796 103)
Temperature dependence: See figure for product Cat. No. 11 119 796 103
pH stability: 5.0-9.0 (see figure for product Cat. No. 11 119 796 103)
Thermal stability: 100% for 20 minutes at +37°C, 50% for 20 minutes at +45°C, 75% for 5 hours at +37°C (see figures)
Specificity: Hexokinase phosphorylates D-glucose, D-fructose, D-mannose, D-glucosamin, 2-deoxyglucose. L-Arabinose, D-xylose, L-rhamnose, D-galactose, D-lactose, sucrose, maltose, trehalose, raffinose, N-acetyl glucosamine do not react. ATP can be partially replaced by other nucleotides.

Specification

Appearance: Clear, yellowish solution, in 50% glycerol (v/v)
pH value: 6.0-7.0
Activity (+25°C, glucose): ≥1200 U/mL
Activity (+30°C): ≥1680 U/mL
Protein (Biuret): ≥75 mg/mL
Contaminants (expressed as percentage of Hexokinase activity):
Alcohol dehydrogenase: ≤0.001
ATPase: ≤0.05
Creatine kinase: ≤0.001
G6P-DH: ≤0.005
Glutamate dehydrogenase: ≤0.01
Glutathione reductase: ≤0.005
Myokinase: ≤0.001
6-Phosphogluconate dehydrogenase: ≤0.001
Phophoglucose isomerase: ≤0.002
Phosphoglucomutase: ≤0.02
Glucose: ≤0.125 µg/mg lyophilizate
Glycerol (enzymatic): 560-680 mg/mL ≙ 45-55%
Stability: At +2 to +8°C within specification range for 18 months.

D-Lactate Dehydrogenase (D-LDH)

from microorganism, lyophilizate

Catalog number	Pack size
12 235 650 103	custom fill

Will be supplied as “LDH”. Unit of measure is “MU”.

DRY ICE

For further processing only.

Recombinant dehydrogenase that catalyzes the interconversion of D(-)-lactate to pyruvate.

Application

Use D-Lactate Dehydrogenase in a variety of diagnostic tests, *e.g.,* in the determination of alanine aminotransferases, lactate or pyruvate. Used for the removal of pyruvate in determinations working with NADH (*i.e.,* triglycerides, lipase, aldolase, aspartate aminotransferases, glutamate dehydrogenase).

EC 1.1.1.28

Specification

Appearance: White to slightly yellow powder or lyophilizate
Solubility: Soluble in water
Activity (+25°C, lyophilizate): ≥340 U/mg
Stability: At -15 to -25°C within specification range for 18 months. Store dry in tightly sealed containers.

D-Lactate Dehydrogenase (D-LDH), Grade I

from *Lactobacillus delbrückii*, **lyophilizate**

Catalog number	Pack size
11 291 416 103	custom fill

Will be supplied as “D(-)-LDH, Special Quality”. Unit of measure is “MU”.

For further processing only.

Dehydrogenase that catalyzes the interconversion of D(-)-lactate to pyruvate.

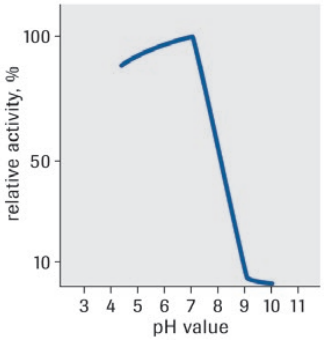
Application

Use D-Lactate Dehydrogenase (D-LDH), Grade I, in a variety of diagnostic tests, *e.g.,* in the determination of alanine aminotransferases, lactate or pyruvate. Used for the removal of pyruvate in determinations working with NADH (*i.e.*, triglycerides, lipase, aldolase, aspartate aminotransferases, glutamate dehydrogenase).

EC 1.1.1.28

Properties

Nomenclature: D-lactate:NAD^+ oxidoreductase
Michaelis constants (Tris maleate buffer, pH 8.0, +25°C):
D-lactate: 0.7 x 10^{-1} mol/L (NAD, 2 mmol/L)
Pyruvate: 1.2 x 10^{-3} mol/L (NADH, 0.1 mmol/L)
NADH: 7.1 x 10^{-5} mol/L (pyruvate, 20 mmol/L)
pH optimum: 7.0 (see figure)
Temperature dependence: See figure
pH stability: 4.0-10.0 (see figure)

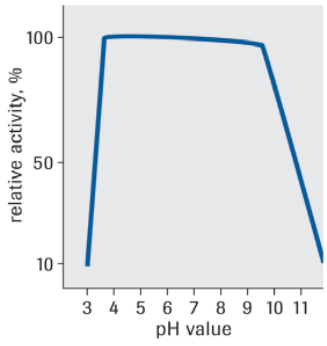


pH optimum

pH stability: 4.0-10.0 (see figure)
Thermal stability: Up to +50°C (see figure)
Specificity: Lactate dehydrogenase is specific for D(-)-lactate, L(+)-lactate does not react.
Remark: Lactate dehydrogenase, Grade I is especially suited for liquid stable applications with extended shelf life requirements.

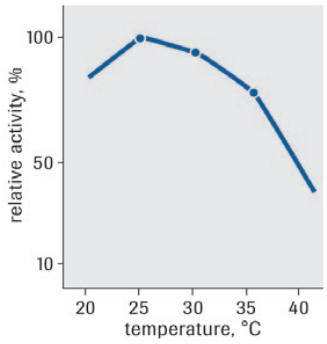
Specification

Appearance: White to yellowish lyophilizate
Solubility: Clear to yellowish solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 6.0-7.0
Activity (+25°C, pyruvate): ≥180 U/mg lyophilizate
Specific activity: ≥450 U/mg protein
Protein (Biuret) : No limit, 0.3-0.8 mg/mg lyophilizate
Contaminants (expressed as percentage of D-Lactate Dehydrogenase activity):
Alcohol dehydrogenase: ≤0.01
Malate dehydrogenase: ≤0.1
''NADH oxidase'': ≤0.0005
Succinate dehydrogenase: ≤0.01
NH_4: ≤0.01 µmol/KU
Na (flame photometric): ≤0.5 µmol/KU
K (flame photometric): ≤0.007 µmol/KU
Stability: At +2 to +8°C within specification range for 12 months. Store dry.

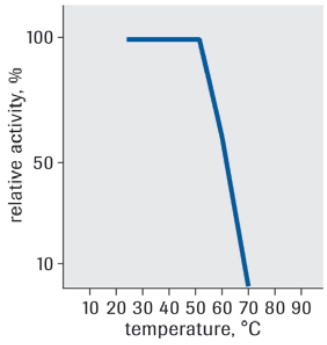


Incubation:
25°C, 60 min
pH 3.0 – 5.0:
citrate buffer, 0.2 mol/l
pH 6.0 – 8.0:
phosphate buffer,
0.2 mol/l
pH 9.0 –11.0:
glycine buffer, 0.2 mol/l
2400 U D-LDH/ml

pH stability



Temperature dependence



Incubation:
10 min
water; pH 5.2
2400 U D-LDH/ml

Thermal stability

D-Lactate Dehydrogenase (D-LDH), Grade II

from *Lactobacillus delbrückii*, **lyophilizate**

Catalog number	Pack size
10 679 666 103	custom fill

Will be supplied as ''D(-)-Lactate Dehydrogenase (D-LDH)''. Unit of measure is ''MU''.

For further processing only.

Dehydrogenase that catalyzes the interconversion of D(-)-lactate to pyruvate.

Application

Use D-Lactate Dehydrogenase (D-LDH), Grade II, in a variety of diagnostic tests, *e.g.,* in the determination of alanine aminotransferases, lactate or pyruvate. Used for the removal of pyruvate in determinations working with NADH (*i.e.,* triglycerides, lipase, aldolase, aspartate aminotransferases, glutamate dehydrogenase).

EC 1.1.1.28

Properties

Nomenclature: D-lactate:NAD^+ oxidoreductase
Michaelis constants (Tris maleate buffer, pH 8.0, +25°C):
D-lactate: 0.7 x 10^{-1} mol/L (NAD, 2 mmol/L)
Pyruvate: 1.2 x 10^{-3} mol/L (NADH, 0.1 mmol/L)
NADH: 7.1 x 10^{-5} mol/L (pyruvate, 20 mmol/L)
pH optimum: 7.0
pH stability: 4.0-10.0
Thermal stability: Up to +50°C
Specificity: Lactate dehydrogenase is specific for D(–)-lactate, L(+)-lactate does not react.

Specification

Appearance: White to yellowish lyophilizate
Solubility: Clear, colorless to slightly yellowish solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 5.7-6.7
Activity (+25°C, pyruvate): ≥150 U/mg lyophilizate
Specific activity: ≥300 U/mg protein
Protein (Biuret): No limit, approximately 0.4-0.7 mg/mg lyophilizate
Contaminants (expressed as percentage of D-Lactate Dehydrogenase activity):
Alcohol dehydrogenase: ≤0.01
Glucose dehydrogenase: ≤0.01
Malate dehydrogenase: ≤0.1
Succinate dehydrogenase: ≤0.01
Stability: At +2 to +8°C within specification range for 12 months. Store dry.

L-Lactate Dehydrogenase (L-LDH)

from pig muscle, for use of AST/GOT-Determination according to IFCC recommendations, lyophilizate

Catalog number	Pack size
10 254 754 103	custom fill

Will be supplied as "LDH IFCC-quality from Hog Muscle". Unit of measure is "MU".
Additional formulation: Suspension in glycerol solution, Catalog No. 10 417 718 103

For further processing only.

Dehydrogenase that catalyzes the interconversion of specific for L(+)-lactate to pyruvate.

Application

Use L-Lactate Dehydrogenase in a variety of diagnostic tests for the removal of pyruvate in determinations working with NADH (*i.e.,* triglycerides, lipase, aldolase, aminotransferases, glutamate dehydrogenase).

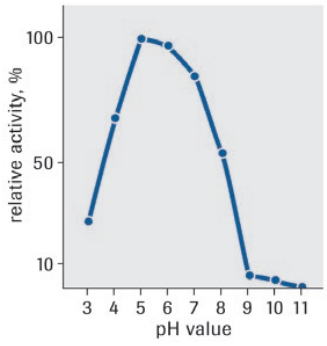
EC 1.1.1.27

Properties

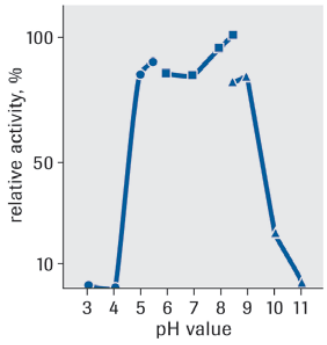
Nomenclature: L-lactate:NAD^+ oxidoreductase
Molecular weight: 140 kD
Isoelectric point: 4.6
Michaelis constants (Phosphate buffer, pH 7.5; +25°C)**:**
Pyruvate: 1.5 x 10^{-4} mol/L (NADH: 0.18 mmol/L)
L-lactate: 3.3 x 10^{-3} mol/L (NAD: 0.5 mmol/L)
NADH: 1.1 x 10^{-5} mol/L (Pyruvate: 0.6 mmol/L)
NAD: 6.7 x 10^{-5} mol/L (L-lactate: 34 mmol/L)
Inhibitors: Oxamate, pyruvate (excess), oxalate, Ag^+, Hg^{2+}, Cu^{2+}
pH optimum: 3.0-7.0 (see figure)
Temperature dependence: See figure
pH stability: 5.5-8.5 (see figure)
Thermal stability: Up to +40°C (see figure)
Specificity: Lactate dehydrogenase is specific for L(+)-lactate, D(–)-lactate does not react. Glyoxylate is also a lactate dehydrogenase substrate. Apart from pyruvate some 2-oxoacids are reduced. NAD analogs (*e.g.,* APAD) react at similar rates.

Specification

Appearance: White lyophilizate
Solubility: Clear colorless solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 6.0-7.0
Activity (+30°C, pyruvate; according to IFCC recommendations):
for Aspartate aminotransferase (AST/GOT) determination: ≥50 U/mg lyophilizate
for Alanine aminotransferase (ALT/GPT) determination: ≥50 U/mg lyophilizate
Activity (mean value of both determinations): ≥50 U/mg lyophilizate
Contaminants (expressed as percentage of Lactate Dehydrogenase activity, assayed according to the IFCC recommendations):
Aspartate aminotransferase (AST/GOT): ≤0.001
unspecificity of Lactate dehydrogenase: ≤0.005

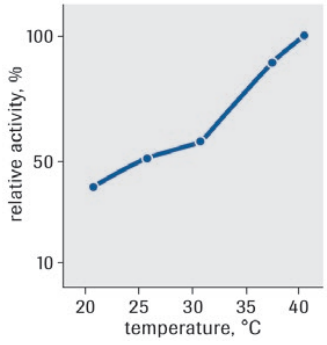


pH optimum



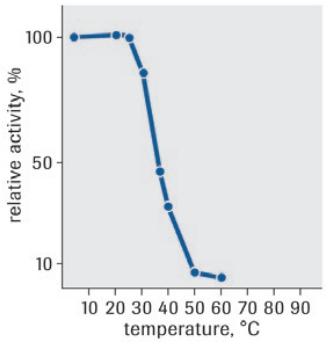
Incubation:
25°C, 6 h resp. 24 h
● pH 3.0 – 5.5:
citrate buffer, 0.1 mol/l
■ pH 5.5 – 8.5:
phosphate buffer,
0.1 mol/l
▲ pH 8.5 –11.0:
glycine buffer, 0.1 mol/l
10 U LDH/ml

pH stability



Temperature dependence

Alanine aminotransferase (ALT/GPT): ≤0.001
unspecificity of Lacatae dehydrogenase: ≤0.005
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 12 months.



Thermal stability

L-Lactate Dehydrogenase (L-LDH)

from pig muscle, for use of AST/GOT-Determination according to IFCC recommendations, solution

Catalog number	Pack size
10 417 718 103	custom fill

Will be supplied as "LDH, IFCC-quality from Hog Muscle". Unit of measure is "MU".

For further processing only.

Dehydrogenase that catalyzes the interconversion of specific for L(+)-lactate to pyruvate.

Application

Use L-Lactate Dehydrogenase in a in a variety of diagnostic tests for the removal of pyruvate in determinations working with NADH (*i.e.,* triglycerides, lipase, aldolase, aminotransferases, glutamate dehydrogenase).

EC 1.1.1.27

Properties

Nomenclature: L-lactate:NAD^+ oxidoreductase
Molecular weight: 140 kD
Isoelectric point: 4.6
Michaelis constants (Phosphate buffer, pH 7.5; +25°C)**:**
Pyruvate: 1.5 x 10^{-4} mol/L (NADH: 0.18 mmol/L)
L-lactate: 3.3 x 10^{-3} mol/L (NAD: 0.5 mmol/L)
NADH: 1.1 x 10^{-5} mol/L (Pyruvate: 0.6 mmol/L)
NAD: 6.7 x 10^{-5} mol/L (L-lactate: 34 mmol/L)
Inhibitors: Oxamate, pyruvate (excess), oxalate, Ag^+, Hg^{2+}, Cu^{2+}
pH optimum: 3.0-7.0 (see figure for product Cat. No. 10 254 754 103)
Temperature dependence: See figure for product Cat. No. 10 254 754 103
pH stability: 5.5-8.5 (see figure for product Cat. No. 10 254 754 103)
Thermal stability: Up to +40°C (see figure for product Cat. No. 10 254 754 103)
Specificity: Lactate dehydrogenase is specific for L(+)-lactate, D(–)-lactate does not react. Glyoxylate is also a lactate dehydrogenase

substrate. Apart from pyruvate some 2-oxoacids are reduced. NAD analogs (*e.g.,* APAD) react at similar rates.

Specification

Appearance: Clear, colorless solution in glycerol, 50% (v/v), pH approximately 7
pH value: 6.5-7.5
Activity (+30°C, pyruvate, according to the IFCC recommendations): ≥9,600 U/mL solution
Specific activity: ≥480 U/mg protein
Protein (Biuret): ≥20 mg/mL solution
Glycerol: 560-680 mg/L ≙ 45-55 % (v/v)
Contaminants (expressed as percentage of Lactate Dehydrogenase specific activity):
Glutamate dehydrogenase: ≤0.003
Aspartate aminotransferase (AST/GOT): ≤0.005
Alanine aminotransferase (ALT/GPT): ≤0.005
Reagent blank for determination of aspartate aminotransferase (AST/GOT): ≤0.9 mA/min
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 12 months.

L-Lactate Dehydrogenase (L-LDH)

from pig muscle, suspension

Catalog number	Pack size
10 021 415 103	custom fill

Will be supplied as ''Lactate Dehydrogenase (LDH), Hog Muscle''. Unit of measure is ''MU''.

For further processing only.

Dehydrogenase that catalyzes the interconversion of specific for L(+)-lactate to pyruvate.

Application

Use L-Lactate Dehydrogenase in a variety of diagnostic tests for the removal of pyruvate in determinations working with NADH (*i.e.*, triglycerides, lipase, aldolase, aminotransferases, glutamate dehydrogenase).

EC 1.1.1.27

Specification

Appearance: White suspension in ammonium sulfate, 3.2 mol/l; Tris, 10 mmol/L, pH approximately 6.5
pH value: 6.0-7.0
Specific activity (+25°C, pyruvate): ≥550 U/mg protein
Protein (Biuret): ≥10 mg/mL
Ammonium sulfate: 3.2±0.2 mol/L
Contaminants (expressed as percentage of Lactate Dehydrogenase activity):

Aldolase: ≤0.001
Glutamate dehydrogenase: ≤0.01
Aspartate aminotransferase (AST/GOT): ≤0.005
Alanine aminotransferase (ALT/GPT): ≤0.005
Malate dehydrogenase: ≤0.01
Myokinase: ≤0.01
Pyruvate kinase: ≤0.001
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 12 months.

L-Lactate Dehydrogenase (L-LDH), chemically modified

from pig heart, lyophilizate

Catalog number	Pack size
11 866 117 103	custom fill

Will be supplied as "Lactate Dehydrogenase (LDH)". Unit of measure is "MU".

For further processing only.

Dehydrogenase that catalyzes the interconversion of L(+)-lactate to pyruvate.

Application

Use L-Lactate Dehydrogenase (L-LDH), chemically modified, in a variety of diagnostic tests for the removal of pyruvate in determinations working with NADH (*i.e.,* triglycerides, lipase, aldolase, aminotransferases, glutamate dehydrogenase). The chemical modification generates an increased liquid stability of the enzyme.

EC 1.1.1.27

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in water (c=10 mg/mL)
pH value: 7.1–8.1
Activity (+25°C, pyruvate): ≥25 U/mg lyophilizate
Specific activity: ≥150 U/mg protein
Protein (BCA): 0.15–0.25 mg/mg lyophilizate
Contaminants (expressed as percentage of Lactate Dehydrogenase activity):
Aspartate aminotransferase (AST/GOT): ≤0.005
Unspecificity of Lactate dehydrogenase: ≤0.05
Alanine aminotransferase (ALT/GPT): ≤0.01
Unspecificity of Lactate dehydrogenase: ≤0.05
''NADH-Oxidase'': ≤0.001
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability in CAPSO (pH 9.4, at +60°C for 1 hour): ≥50%
Stability: At +2 to +8°C within specification range for 12 months.

L-Lactate Dehydrogenase (L-LDH)

from rabbit muscle, suspension

Catalog number	Pack size
10 003 557 103	custom fill

Will be supplied as ''Lactate Dehydrogenase, Rabbit Muscle''. Unit of measure is ''MU''.

For further processing only.

Dehydrogenase that catalyzes the interconversion of L(+)-lactate to pyruvate.

Application

Use L-Lactate Dehydrogenase in a variety of diagnostic tests for the removal of pyruvate in determinations working with NADH (*i.e.*, triglycerides, lipase, aldolase, aminotransferases, glutamate dehydrogenase).

EC 1.1.1.27

Specification

Appearance: Almost white suspension in ammonium sulfate, 3.2 mol/L, pH approximately 6.5
pH value: 6.0–7.0
Specific activity (+25°C, pyruvate): ≥550 U/mg protein
Protein (Biuret): ≥10 mg/mL
Ammonium sulfate: 3.2±0.2 mol/L
Contaminants (expressed as percentage of Lactate Dehydrogenase activity):
Aldolase: ≤0.001
Aspartate aminotransferase (AST/GOT): ≤0.01
Alanine aminotransferase (ALT/GPT): ≤0.01
Malate dehydrogenase: ≤0.01
Myokinase: ≤0.01
Pyruvate kinase: ≤0.001
Stability: At +2 to +8°C within specification range for 12 months.

Lactate 2-Monooxygenase (Lactate oxidase), Grade I

from *Aerococcus viridans*, **expressed in** *E. coli*, **lyophilizate**

Catalog number	Pack size
04 822 277 103	custom fill

Will be supplied as "Lactat-OD, SQ, rec., lyo". Unit of measure is "MU".

DRY ICE

For further processing only.

Recombinant oxidoreductase that catalyzes the conversion of lactate to pyruvate.

Application

Use Lactate 2-Monooxygenase, Grade I in diagnostic tests for the determination of L-lactate.

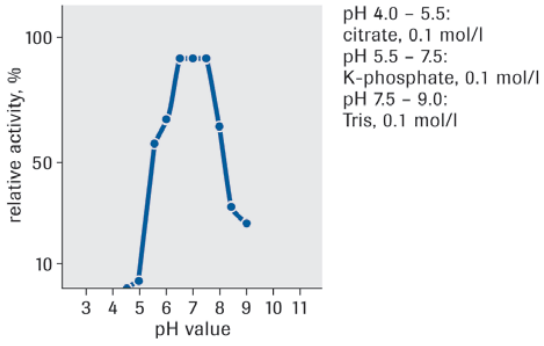
EC 1.13.12.4

Properties

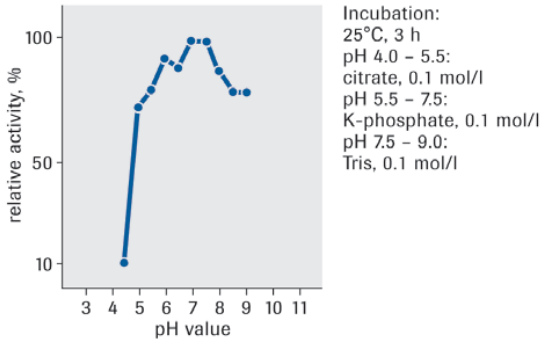
Nomenclature: L-lactate:oxigen oxidoreductase
Michaelis constant: L-lactate: 5 x 10^{-4} mol/L
$V_{maximum}$: L-lactate: 0.2 mol/L
pH optimum: 6.5-7.5 (see figure)
Temperature dependence: See figure
pH stability: 6.0-9.0 (see figure)
Thermal stability: Up to +65°C (see figure)

Specification

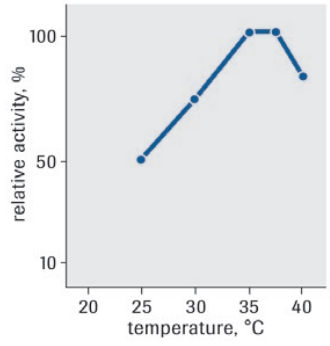
Appearance: Yellow lyophilizate
Activity: (+25°C, L-lactate): ≥40 U/mg lyophilizate
Specific activity: ≥55 U/mg protein
Contaminants (expressed as percentage of Lactate 2-Monooxygenase activity):
Catalase: ≤0.2
Glucose oxidase: ≤0.001
Pyruvate oxidase: ≤0.001
Uricase: ≤0.001
Stability: At -15 to -25°C within specification range for 12 months. Store dry.



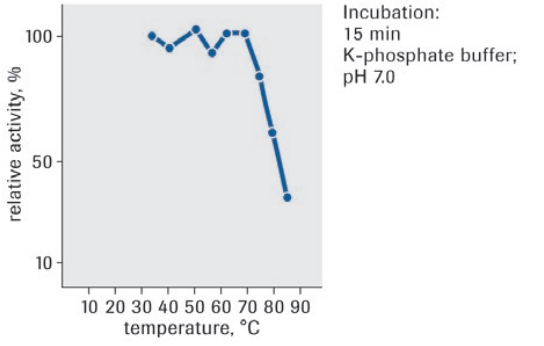
pH optimum



pH stability



Temperature dependence



Thermal stability

Lactate 2-Monooxygenase (Lactate oxidase), Grade II

from *Aerococcus viridans*, **expressed in** *E. coli*, **lyophilizate**

Catalog number	Pack size
11 798 197 103	custom fill

Will be supplied as “Lactat-OD, rec., Lyo.”. Unit of measure is “MU”.

DRY ICE

For further processing only.

Recombinant oxidoreductase that catalyzes the conversion of lactate to pyruvate.

Application

Use Lactate 2-Monooxygenase, Grade II in diagnostic tests for the determination of L-lactate.

EC 1.13.12.4

Properties

Nomenclature: L-lactate:oxigen oxidoreductase
Michaelis constant: L-lactate: 5 x 10^{-4} mol/L
$V_{maximum}$: L-lactate: 0.2 mol/L
pH optimum: 6.5-7.5 (see figure for product Cat. No. 04 822 277 103)
Temperature dependence: See figure for product Cat. No. 04 822 277 103
pH stability: 6.0-9.0 (see figure for product Cat. No. 04 822 277 103)
Thermal stability: Up to +65°C (see figure for product Cat. No. 04 822 277 103)

Specification

Appearance: Yellow lyophilizate
Activity (25°C; with L-lactate) = ≥70 U/mg lyophilized material
Specific activity: ≥55 U/mg protein
Protein (BCA): 0.3-0.7 mg/mg lyophilizate
Contaminants (expressed as percentage of Lactate 2-Monooxygenase activity):
Catalase: ≤0.2
Glucose oxidase: ≤0.001
Pyruvate oxidase: ≤0.001
Uricase: ≤0.001
Stability: At -15 to -25°C within specification range for 12 months. Store dry.

Lactate 2-Monooxygenase (Lactate oxidase)

from *Pediococcus* species, lyophilizate

Catalog number	Pack size
10 980 927 103	custom fill

Will be supplied as “Lactate Qxidase from Pediococcus species”. Unit of measure is “kU”.

DRY ICE

For further processing only.

Oxidoreductase that catalyzes the conversion of lactate to pyruvate.

Application

Use Lactate 2-Monooxygenase in diagnostic tests for the determination of lactate.

EC 1.13.12.4

Specification

Appearance: Yellow lyophilizate
Activity (25°C, L-lactate): ≥20 U/mg lyophilizate
Specific activity: ≥55 U/mg protein
Protein (Lowry): 0.2-0.4 mg/mg lyophilizate
Stability: At -15 to -25°C within specification range for 18 months. Store dry.

Lipoprotein Lipase

from *Pseudomonas* species, lyophilizate

Catalog number	Pack size
10 734 284 103	custom fill

Will be supplied as “Lipoprotein Lipase from Pseudomon.spec.”. Unit of measure is “MU”.

For further processing only.

Enzyme that hydrolyzes triglycerides into three free fatty acids and glycerol.

Application

Use Lipoprotein Lipase in diagnostic tests for the determination of triglycerides together with Glycerol Kinase, Catalog No. 10 539 937 103 or 11 499 530 103 and Glycerol-3-phosphate Dehydrogenase, Catalog No. 11 654 730 103 or 11 582 003 103.

EC 3.1.1.34

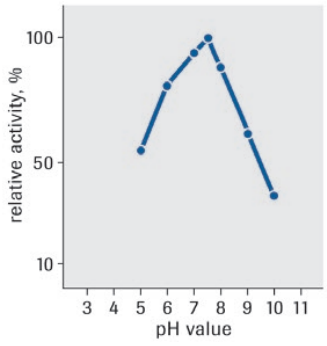
Properties

Nomenclature: Triacylglycero-protein acylhydrolase
Molecular weight: 47 kD
Effectors: Hg^{2+}, Ag^{+}, Cr^{2+}, Sn^{2+}, Cu^{2+} and ionic detergents inhibit. Mg^{2+}, sodium cholate and BSA stabilize the enzyme. 4-Chloromercuribenzoate (2 mmol/L), monoiodoacetate (2 mmol/L), NaF (20 mmol/L), NaN_3 (20 mmol/L), EDTA (5 mmol/L) and 2-phenanthroline (2 mmol/L) do not affect the enzyme activity while SDS (0.1% (w/v)) is inactivating.
pH optimum: 7.5 (see figure)
pH stability: 6.0-10.0 (see figure)
Thermal stability: Up to +50°C (see figure)
Specificity: Lipoprotein Lipase has both lipolytic and sterol ester hydrolytic activities. It hydrolyzes triacylglycerols in chylomicrons,

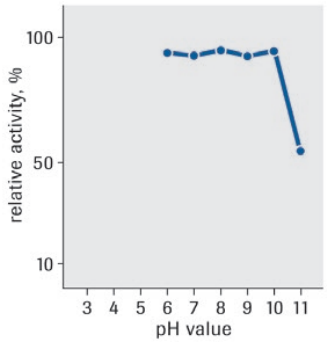
lipoproteins and diacylglycerols. With human plasma as substrate triglycerides are hydrolyzed more rapidly than cholesterol esters. The effects of pH and ionic strength on the enzymatic activity are somewhat different between the hydrolysis of triglyceride and of cholesterol ester depending on the different states of these substrates in the plasma or the transfer of the reaction products at the interface of substrates.
Lipolytic activity (Substrate, Number of C-atoms to number of double bonds, Relative rate):
olive oil: 94%
triolein (18:1): 100%
tripalmitin (16:0): 2%
trimyristin (14:0): 7%
trilaurin (12:0): 4%
tricaprin (10:0): 17%
tricaprylin (8:0): 64%
tricaproin (6:0): 2%
tributyrin (4:0): 2%
tripropionin (3:0): 2%
triacetin (2:0): 1%

Specification

Appearance: Brownish lyophilizate
Solubility: Clear, brown solution in water (c=50 mg/mL)
Activity (+25°C, cholesterol oleate): ≥100 U/mg lyophilizate
Contaminants (expressed as percentage of Lipoprotein Lipase activity):
ATPase: ≤0.005
Catalase: ≤1.0
Glycerokinase: ≤0.001
Glucose oxidase: ≤0.001
Hexokinase: ≤0.005
''NADH oxidase'': ≤0.001
Uricase: ≤0.005
Stability: At +2 to +8°C within specification range for 12 months. Store dry.

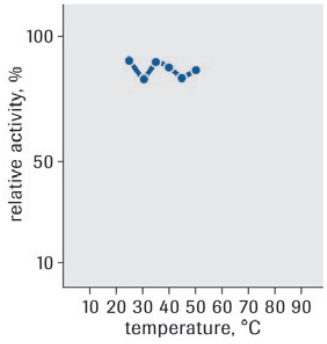


pH optimum



Incubation:
25°C, 60 min
pH 6.0 – 8.0:
phosphate buffer,
0.7 mol/l
pH 9.0 –11.0:
glycine buffer, 2.1 mol/l
50 U LPL/ml

pH stability



Incubation:
30 min
Tris buffer, 0.1 mol/l;
pH 7.7
50 U LPL/ml

Thermal stability

Lipoprotein Lipase, chemically modified

from *Pseudomonas* species, lyophilizate

Catalog number	Pack size
11 145 991 103	custom fill

Will be supplied as “Lipoprotein Lipase Modified”. Unit of measure is “MU”.

For further processing only.

Enzyme that hydrolyzes triglycerides into three free fatty acids and glycerol.

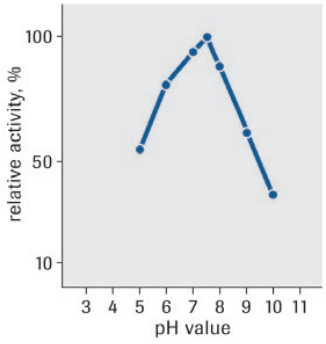
Application

Use Lipoprotein lipase in diagnostic tests for the determination of triglycerides together with Glycerol Kinase, Catalog Nos. 10 539 937 103 or 11 499 530 103 and Glycerol-3-phosphate Dehydrogenase,Catalog Nos. 11 654 730 103 or 11 582 003 103.
The chemical modification generates an increased liquid stability of the enzyme.

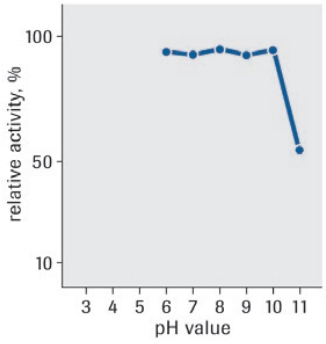
EC 3.1.1.34

Properties

Nomenclature: Triacylglycero-protein acylhydrolase
Molecular weight: 47 kD
Effectors: Hg^{2+}, Ag^{+}, Cr^{2+}, Sn^{2+}, Cu^{2+} and ionic detergents inhibit. Mg^{2+}, sodium cholate and BSA stabilize the enzyme. 4-Chloromercuribenzoate (2 mmol/L), monoiodoacetate (2 mmol/L), NaF (20 mmol/L), NaN_3 (20 mmol/L), EDTA (5 mmol/L) and 2-phenanthroline (2 mmol/L) do not affect the enzyme activity while SDS (0.1% (w/v)) is inactivating.
pH optimum: 7.5 (see figure)
pH stability: 6.0-10.0 (see figure)
Thermal stability: Up to +50°C (see figure)
Specificity: Lipoprotein Lipase has both lipolytic and sterol ester hydrolytic activities. It hydrolyzes triacylglycerols in chylomicrons, lipoproteins and diacylglycerols. With human plasma as substrate triglycerides are hydrolyzed more rapidly than cholesterol esters. The effects of pH and ionic strength on the enzymatic activity are somewhat different between the hydrolysis of triglyceride and of cholesterol ester depending on the different states of these substrates in the plasma or the transfer of the reaction products at the interface of substrates.
Lipolytic activity (Substrate, Number of C-atoms to number of double bonds, Relative rate):
olive oil: 94%
triolein (18:1): 100%
tripalmitin (16:0): 2%
trimyristin (14:0): 7%
trilaurin (12:0): 4%
tricaprin (10:0): 17%
tricaprylin (8:0): 64%
tricaproin (6:0): 2%
tributyrin (4:0): 2%
tripropionin (3:0): 2%
triacetin (2:0): 1%

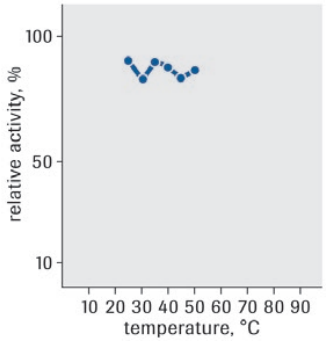


pH optimum



Incubation:
25°C, 60 min
pH 6.0 – 8.0:
phosphate buffer,
0.7 mol/l
pH 9.0 –11.0:
glycine buffer, 2.1 mol/l
50 U LPL/ml

pH stability



Incubation:
30 min
Tris buffer, 0.1 mol/l;
pH 7.7
50 U LPL/ml

Thermal stability

Remark: Chemically modified Lipoprotein Lipase (LPL) is more hydrophilic than native LPL. Carryover effect is therefore reduced.

Specification

Appearance: Brownish lyophilizate
Solubility: Clear, brown solution in water (c=50 mg/mL)
Activity (+25°C, cholesterol oleate): ≥10 U/mg lyophilizate
Contaminants (expressed as percentage of Lipoprotein Lipase activity):
ATPase: ≤0.005
Catalase: ≤1.0
Glycerokinase: ≤0.001
Hexokinase: ≤0.005
''NADH oxidase'': ≤0.001
Uricase: ≤0.005
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

Lysozyme

from hen egg white, crystalline powder

Glucosidic bond hydrolyzing enzyme

Application

Use Lysozyme for bacteriolysis, preparation of protoplasts and sample preparation prior to isolation of nucleic acids.

Product description

Lysozyme from chicken egg. During purification and processing of this enzyme, steps included pH treatment at pH 3.5 or less for at minimum 30 minutes.

EC 3.2.1.17

Specification

Appearance: White, crystalline powder
Activity (+25°C, with *Micrococcus luteus*): ≥12,200 U/mg substance
Activity (+25°C, with *M. luteus*, previous Roche-substrate; calculated): ≥50,000 U/mg substance
Proteases (azocoll): ≤0.5 U/mg substance
Stability: At +2 to +8°C within specification range for 36 months.
Store dry.

Catalog number	Pack size
10 153 516 001	custom fill
10 153 516 103	custom fill

Will be supplied as ''Lysozyme (Muramidase) from Hen Egg White''. Unit of measure is ''g''.

For further processing only.

Malate Dehydrogenase

from pig heart, lyophilizate

Catalog number	Pack size
10 200 387 103	custom fill

Will be supplied as “Malate Dehydrogenase, Pig Heart (Mitochon.)”. Unit of measure is “MU”.

For further processing only.

Dehydrogenase that catalyzes the interconversion of malate to oxaloacetate.

Application

Use Malate Dehydrogenase in diagnostic tests for the determination of aspartate aminotransferase or in applications for citric and acetic acid testing.

EC 1.1.1.37

Specification

Appearance: White lyophilizate, stabilized
Solutbility: Clear, colorless solution in water (c=10 mg/mL)
pH value: 7.0–8.0
Activity (+25°C, oxaloacetate): ≥70 U/mg lyophilizate
Contaminants (expressed as percentage of Malate Dehydrogenase activity):
Fumarase: ≤0.01
Aspartate aminotransferase (AST/GOT): ≤0.002
Lactate dehydrogenase: ≤0.01
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 12 months. Store dry.

Malate Dehydrogenase, chemically modified

from pig heart, lyophilizate

Catalog number	Pack size
11 866 109 103	custom fill

Will be supplied as “MDH, Lyo., mod.”. Unit of measure is “MU”.

For further processing only.

Dehydrogenase that catalyzes the interconversion of malate to oxaloacetate.

Application

Use Malate Dehydrogenase in diagnostic tests for the determination of aspartate aminotransferase or in applications for citric and acetic acid testing. The chemical modification generates an increased liquid stability of the enzyme.

EC 1.1.1.37

Specification

Appearance: White lyophilizate
pH value: 7.5-8.5
Activity (+25°C, oxaloacetate): ≥20 U/mg lyophilizate
Specific activity: ≥400 U/mg protein
Protein (BCA): ≥0.02 mg/mg lyophilizate
Contaminants (expressed as percentage of Malate Dehydrogenase activity):
Aspartate aminotransferase (AST/GOT): ≤0.01
''NADH-Oxidase'': ≤0.005
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 18 months.

Malate Dehydrogenase, IFCC Quality

from pig heart, lyophilizate

Catalog number	Pack size
10 267 155 103	custom fill

Will be supplied as "MDH IFCC-quality, Pig Heart (Mitochon.)". Unit of measure is "MU".

For further processing only.

Dehydrogenase that catalyzes the interconversion of malate to oxaloacetate.

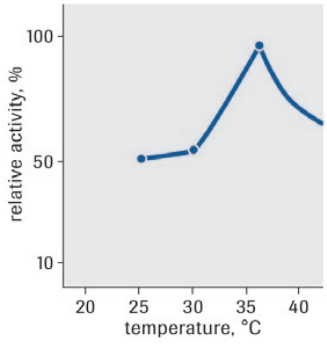
Application

Use Malate Dehydrogenase in diagnostic tests for the determination of aspartate aminotransferase or in applications for citric and acetic acid testing.

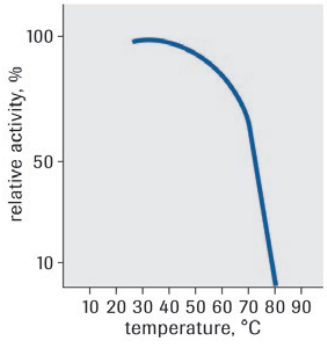
EC 1.1.1.37

Properties

Nomenclature: L-malate:NAD^+ oxidoreductase
Molecular weight: 70 kD
Isoelectric point: 6.1-6.4
Michaelis constants (Phosphate buffer, 95 mmol/L, pH 8.3, +25°C):
L-malate: 4.0 x 10^{-4} mol/L
L-tartrate: 9.0 x 10^{-3} mol/L
meso-tartrate: 1.2 x 10^{-3} mol/L
oxaloacetate: 3.3 x 10^{-5} mol/L
Inhibitors: Iodinated compounds such as iodine cyanide, thyroxine and molecular iodine, phenols, 1,10-phenanthroline, 8-hydroxyquinoline, sulfide, nicotinic acidamide, adenine, AMP, ATP; oxaloacetate (excess).
Activators: Phosphate, arsenate, Zn^{2+}
pH optimum: 7.5 (see figure)
Temperature dependence: See figure
pH stability: 7.0-9.0 (see figure)
Thermal stability: Up to +40°C (see figure)
Specificity: L-configuration of malate and tartrate. NAD can be replaced by its analogs, but not by NADP.



Temperature dependence

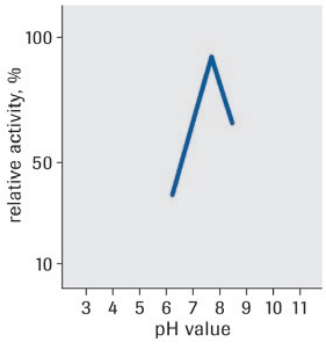


Incubation:
10 min
$(NH_4)_2 SO_4$, 3.2 mol/l;
pH 6.0
12 000 U MDH/ml

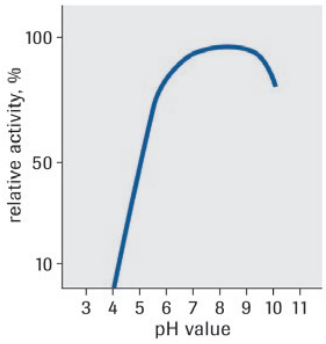
Thermal stability

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in water (c=10 mg/mL)
Activity (+30°C, oxaloacetate; according to the IFCC recommendations): ≥70 U/mg lyophilizate
Contaminants (expressed as percentage of Malat Dehydrogenase activity; assayed according to the IFCC recommendations):
Aspartate aminotransferase (AST/GOT): ≤0.001
Alanine aminotransferase (ALT/GPT): ≤0.001
Glutamate dehydrogenase: ≤0.005
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 12 months. Store dry.



pH optimum



Incubation:
25°C, 180 min
pH 3.0 – 5.0:
citrate buffer, 0.1 mol/l
pH 6.0 – 8.0:
phosphate buffer, 0.1 mol/l
pH 9.0 – 11.0:
glycine buffer, 0.1 mol/l
1200 U MDH/ml

pH stability

Malate Dehydrogenase, IFCC Quality

from pig heart, solution

Dehydrogenase that catalyzes the interconversion of malate to oxaloacetate.

Application

Use Malate Dehydrogenase in diagnostic tests for the determination of aspartate aminotransferase or in applications for citric and acetic acid testing.

EC 1.1.1.37

Properties

Nomenclature: L-malate:NAD^+ oxidoreductase
Molecular weight: 70 kD
Isoelectric point: 6.1-6.4
Michaelis constants (Phosphate buffer, 95 mmol/L, pH 8.3, +25°C):
L-malate: 4.0×10^{-4} mol/L
L-tartrate: 9.0×10^{-3} mol/L

Catalog number	Pack size
10 417 726 103	custom fill

Will be supplied as "MDH, IFCC-quality, Pig Heart (Mitochon.)". Unit of measure is "MU".

For further processing only.

meso-tartrate: 1.2 x 10^{-3} mol/L
oxaloacetate: 3.3 x 10^{-5} mol/L
Inhibitors: Iodinated compounds such as iodine cyanide, thyroxine and molecular iodine, phenols, 1,10-phenanthroline, 8-hydroxyquinoline, sulfide, nicotinic acidamide, adenine, AMP, ATP; oxaloacetate (excess).
Activators: Phosphate, arsenate, Zn^{2+}
pH optimum: 7.5 (see figure for product Cat. No. 10 267 155 103)
Temperature dependence: See figure for product Cat. No. 10 267 155 103
pH stability: 7.0-9.0 (see figure for product Cat. No. 10 267 155 103)
Thermal stability: Up to +40°C (see figure for product Cat. No. 10 267 155 103)
Specificity: L-configuration of malate and tartrate. NAD can be replaced by its analogs, but not by NADP.

Specification

Appearance: Clear, colorless solution in glycerol (50% (v/v))
pH value: 6.5-7.5
Specific activity (+30°C, oxaloacetate): ≥900 U/mg protein
Protein (Biuret): ≥10 mg/mL
Contaminants (expressed as percentage of Malate Dehydrogenase activity):
Aspartate aminotransferase (AST/GOT): ≤0.005
Alanine aminotransferase (ALT/GPT): ≤0.005
Glutamate dehydrogenase: ≤0.003
Reagent blank for determination of aspartate aminotransferase (AST/GOT): ≤0.009 (δA_{334}/10 minutes)
SVD free: Corresponds to specification
pH 5.5 treatment (for at minimum 30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 12 months.

N-Methylhydantoinase (ATP-hydrolyzing)

from *Arthrobacter* species, expressed in *E. coli*, lyophilizate

Hydrolase for creatinine determination that uses ATP to catalyze the conversion of N-methylhydantoin to N-carbomoylsarcosine.

Application

Use N-Methylhydantoinase (ATP-hydrolyzing) in diagnostic tests for the determination of creatinine in combination with Creatinine Deaminase Catalog No. 11 330 764 103, N-Carbamoylsarcosine Amidase, Catalog No. 11 248 847 103 and Sarcosine Oxidase, Catalog No. 11 378 856 103.

EC 3.5.2.14

Catalog number	Pack size
11 288 555 103	custom fill

Will be supplied as “N-Methylhydantoin Hydrolase”. Unit of measure is “kU”.

DRY ICE

For further processing only.

Specification

Appearance: White lyophilizate
Solubility. Clear, colorless solution in water (c=10 mg/mL, +25 °C)
pH value (c=100 mg/mL in water): 7.8-8.8
Activity (+25°C, N-methylhydantoin): 0.6-1.0 U/mg lyophilizate
Protein (Biuret): 20-43 mg/100 mg lyophilizate
Contaminants (expressed as percentage of N-Methylhydantoinase activity):
Creatinase: ≤0.013
Creatininase: ≤0.01
Catalase: ≤100
Uricase: ≤0.01
Stability: At -15 to -25°C within specification range for 12 months.
Store dry. Protect from light.

NAD(P)H Dehydrogenase (quinone) (Diaphorase)

from pig heart, suspension

Catalog number	Pack size
10 153 427 103	custom fill

Will be supplied as "Diaphorase, Grade I from Pig Heart". Unit of measure is "g".

For further processing only.

Dehydrogenase that catalyzes the oxidation of dihydrolipoyl groups and has diaphorase activity.

Application

Use the diaphorase activity of NAD(P)H Dehydrogenase (quinone) for the determination of NAD(P)H and many dehydrogenases when coupled with various dyes which act as hydrogen acceptors from NAD(P)H, *e.g.* tetrazolium salts.

EC 1.6.5.2

Specification

Appearance: Yellow suspension in ammonium sulfate, 3.2 mol/L
pH value: 5.5-6.5
Specific activity (+25°C, lipoate): ≥25 U/mg protein
Protein (Biuret): 10±1 mg/mL
Ammonium sulfate: 3.2±0.2 mol/L
SVD free: Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At +2 to +8°C within specification range for 12 months.

Nitrate Reductase

from *Aspergillus* species, lyophilizate

Catalog number	Pack size
10 918 202 103	custom fill

Will be supplied as ''Nitrate Reductase (Aspergillus species)''. Unit of measure is ''kU''.

DRY ICE

For further processing only.

Oxidoreductase that catalyzes the reduction of nitrate to nitrite.

Application

Use Nitrate Reductase in diagnostic tests for the determination of nitrate.

EC 1.7.1.2

Specification

Appearance: Yellow lyophilizate
Activity (+25°C, nitrate): ≥0.4 U/mg lyophilizate
Specific activity: ≥10 U/mg protein
Protein (Biuret): No limit
Contaminants (expressed as percentage of Nitrate Reductase activity):
Alcohol dehydrogenase (NADPH dependent): ≤0.8
''NADPH oxidase'': ≤0.5
Nitrite reductase: ≤0.15
Stability: At -15 to-25°C within specification range for 12 months.
Store dry. Protect from light.

Oxalate Oxidase

from barley seedings, lyophilizate

Catalog number	Pack size
10 570 524 103	custom fill

Will be supplied as "Oxalate Oxidase from Barley Seedlings". Unit of measure is "U".

DRY ICE

For further processing only.

Oxidoreductase that catalyzes the interconversion of oxalate to carbon dioxide and hydrogen peroxide.

Application

Use Oxalate Oxidase in diagnostic tests for the determination of oxalate.

EC 1.2.3.4

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless to brownish solution in water (c=40 mg/mL)
Activity (+37°C, oxalate): ≥0.25 U/mg lyophilizate
Specific activity: ≥5 U/mg protein
Protein (Biuret): No limit
Stability: At -15 to -25°C within specification range for 12 months.
Store dry.

Peroxidase (POD), Grade II

from horse radish, lyophilizate

Catalog number	Pack size
11 378 783 103	custom fill

Will be supplied as "Peroxidase (POD), Grade II, Horse-radish". Unit of measure is "MU".

For further processing only.

Application

Use Peroxidase (POD), Grade II, for the oxidation of reduced dyes in the indicator reaction of many diagnostic tests, *e.g.,* for the determination of blood glucose, triglycerides or lactate. It may also be used as a marker enzyme for enzyme immunoassays (EIA).

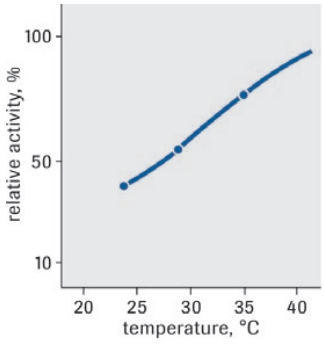
EC 1.11.1.7

Properties

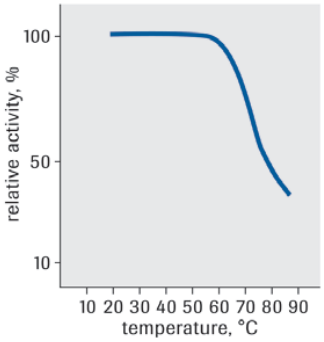
Nomenclature: Donor:hydrogen-peroxide oxidoreductase
Molecular weight: 40 kD
Structure: Glycoprotein with one mole of protoheme IX
Isoelectric point: 7.2
Rate constants:
a) Hydrogen acceptors:
H_2O_2 9 x 10^8 [L x mol^{-1} x s^{-1}]
methyl peroxide 1.5 x 10^6 [L x mol^{-1} x s^{-1}]
ethyl peroxide 3.6 x 10^6 [L x mol^{-1} x s^{-1}]
b) Hydrogen donors: Many
Inhibitors: Cyanide, sulfide, fluoride, azide, hydroxylamine, hydroxyl ions
Activators: Peroxidation of o-dianisidine is accelerated by ammonia, pyridine, imidazole at pH values >7.0
pH optimum: 6.0-6.5 (see figure)
Temperature dependence: See figure
pH stability: 4.0-10.0 (see figure)
Thermal stability: Up to +40°C (see figure)
Specificity: Peroxidase is specific for the hydrogen acceptor; only H_2O_2, methyl- and ethylperoxides are active. In contrast the enzyme is not specific for the hydrogen donor. A large number of phenols, aminophenols, diamines, indophenols, leucocyte dyes, ascorbate and several amino acids react.

Specification

Appearance: Red-brown lyophilizate
Solubility: Clear, red-brown solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 6.6-7.6
Activity: ≥200 U/mg lyophilizate
Purity number (A_{403}/A_{275}): 2.0-3.5
A_{500} (100 U/mL): ≤0.120
Contaminants (expressed as percentage of Peroxidase activity):
ATPase: ≤0.001
Catalase: ≤0.7
Contaminating oxidases: ≤0.00005
Phosphatase, acidic: ≤0.001

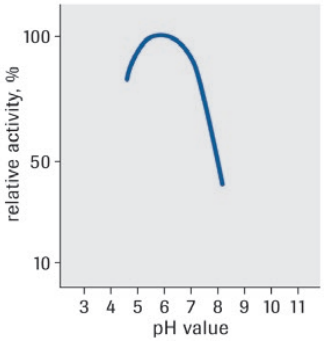


Temperature dependence



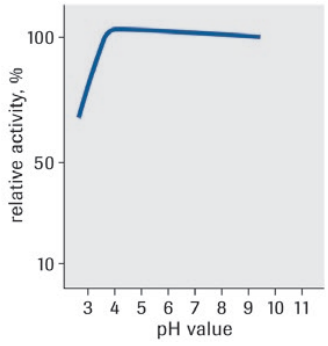
Incubation:
10 min
phosphate buffer,
0.1 mol/l; pH 7.0
2 000 U POD/ml

Thermal stability



pH optimum

Glucose: ≤0.25 µg/mg lyophilizate
Stability: At +2 to +8°C within specification range for 24 months. Store dry.



Incubation:
25°C, 180 min
pH 3.0 – 5.0:
citrate buffer, 0.1 mol/l
pH 6.0 – 8.0:
phosphate buffer,
0.1 mol/l
pH 9.0 – 11.0:
glycine buffer, 0.1 mol/l
200 U POD/ml

pH stability

Phosphogluconate Dehydrogenase (decarboxylating)

from yeast, lyophilizate

Catalog number	Pack size
11 126 482 103	custom fill

Will be supplied as "6-PGDH from Yeast, Lyophilizate". Unit of measure is "kU".

For further processing only.

Dehydrogenase that catalyzes the formation of ribulose 5-phosphate from 6-phosphogluconate.

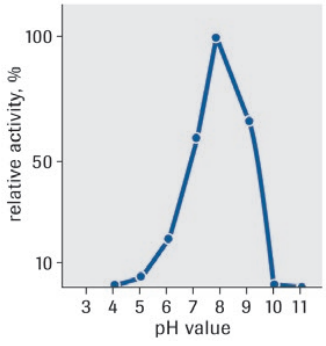
Application

Use Phosphogluconate Dehydrogenase in diagnostic tests for the determination of creatine kinase or glucose in the combination with Hexokinase, Catalog Nos. 11 119 796 103, Glucose-6-phosphate Dehydrogenase, Catalog Nos. 10 186 783 103, 11 389 343 103, 11 293 206 103 or 10 190 454 103, and 6-Phosphogluconolactonase, Catalog No. 11 373 129 103.

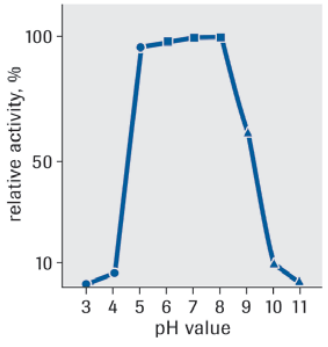
EC 1.1.1.44

Properties

Nomenclature: 6-phospho D-gluconate:$NADP^+$ 2-oxidoreductase (decarboxylating)
Molecular weight: 150 kD (native), 47 kD (SDS-PAGE)
Michaelis constants (TEA, 0.1 mol/L, pH 7.6, +25°C):
6-Phosphogluconate: 7.1 x 10^{-5} mol/L
NADP: 1.3 x 10^{-4} mol/L
Inhibitor constant (Phosphate buffer, pH 7.5):
Pyridoxal-5-P: 4.3 x 10^{-5} mol/L competitive
Inhibitors: Pyridoxal-5-P, iodoacetate and 4-hydroxymercuribenzoate
Activators: Chelators (EDTA, cysteine) plus metal ions (Mg^{2+}); NaCl (0.2 mol/L), KCl (0.2 mol/L).
pH optimum: 7.8 (see figure)
Temperature dependence: See figure
pH stability: 5.0-8.0 (see figure)
Thermal stability: Up to +45°C (see figure)



pH optimum



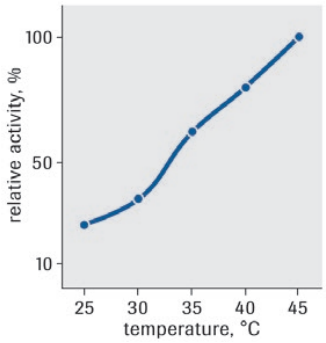
Incubation:
25°C, 180 min
● pH 3.0 – 5.0:
citrate buffer, 0.1 mol/l
■ pH 6.0 – 8.0:
phosphate buffer,
0.1 mol/l
▲ pH 9.0 – 11.0:
glycine buffer, 0.1 mol/l
25 U 6-PGDH/ml

pH stability

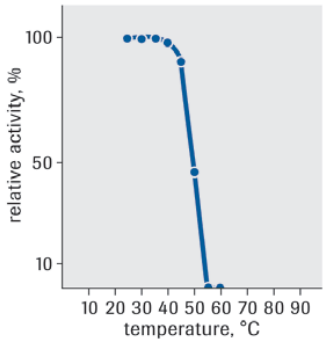
Specificity: Phosphogluconate dehydrogenase is specific for NADP; NAD does not react.

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 7.0-8.0
Protein (Biuret): 0.08-0.16 mg/mg lyophilizate
Activity (+25°C, gluconate-6-P): ≥2 U/mg lyophilizate
Specific activity: ≥12 U/mg protein
Contaminants (expressed as percentage of 6-Phosphogluconate Dehydrogenase activity):
Creatine kinase: ≤0.006
G6P-DH: ≤0.01
Glutathione reductase: ≤0.01
Hexokinase: ≤0.01
Phosphoglucose isomerase: ≤0.03
Stability: At +2 to +8°C within specification range for 12 months.



Temperature dependence



Incubation:
10 min
Tea buffer, 0.1 mol/l;
pH 7.6
25 U 6-PGDH/ml

Thermal stability

6-Phosphogluconolactonase

from *Leuconostoc mesenteroides*, **lyophilizate**

Hydrolase that catalyzes the conversion of 6-phosphogluconolactone to 6-phosphogluconate.

Application

Use 6-Phosphogluconolactonase in diagnostic tests for the determination of creatine kinase or glucose in the combination with Hexokinase, Catalog Nos. 11 119 796 103, Glucose-6-phosphate Dehydrogenase, Catalog Nos. 10 186 783 103, 11 389 343 103, 11 293 206 103 or 10 190 454 103, and Phosphogluconate Dehydrogenase, Catalog No. 11 126 482 103.

EC 1.1.1.31

Properties

Nomenclature: 6-phosphogluconolactonase
Molecular weight: 38 kD (SDS)
Isoelectric point: 6.0

Catalog number	Pack size
11 373 129 103	custom fill

Will be supplied as "6-Phosphogluconolactonase". Unit of measure is "kU".

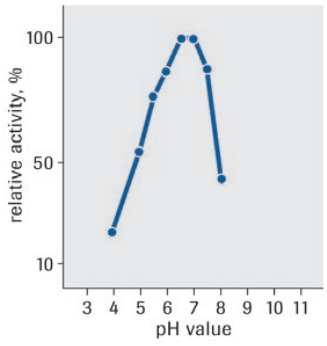
DRY ICE

For further processing only.

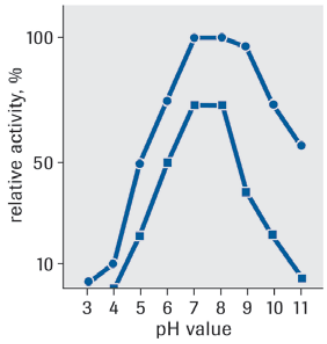
Michaelis constants (MES buffer, pH 6.5; +25°C):
6-Phosphogluconalactone: <1 x 10^{-7} mol/L
Inhibitors: $(NH_4)_2SO_4$ (> 20 mmol/L), Mg^{2+} (>10 mmol/l), NaCl (>10 mmol/L). The enzyme is not inhibited by Cu^{2+}, Zn^{2+}, EDTA, 5.5'-dithiobis-2-nitrobenzoic acid, octanol (0.01%), Triton X-100 (1%) and Thesit (1%).
pH optimum: 6.0-7.5 (see figure)
Temperature dependence: See figure
pH stability: 7.0-9.0 (at +4°C, see figure)
Thermal stability: Up to +50°C (see figure)
Stability at different ionic strength: See figure
Specificity: 6-Phosphogluconolactone 100%, gluconolactone 0.5%

Specification

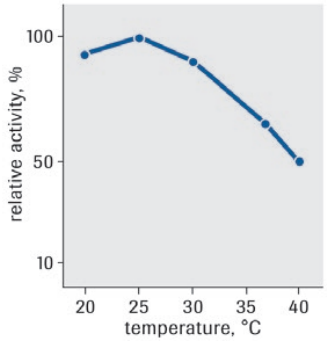
Appearance: White lyophilizate
Activity (+25°C, 6-phosphogluconolactone): ≥50 U/mg lyophilizate
Contaminants (expressed as percentage of 6-Phosphogluconolactonase activity):
Creatine kinase: ≤0.001
G6P-DH (with NAD): ≤0.02
Myokinase: ≤0.001
''NADPH oxidase'': ≤0.001
6- Phosphogluconate dehydrogenase (with NAD): ≤0.01
Function testing (with G6P-DH, reaction time up to 5 minutes): ≥98%
Signal stability (δA_{340}, 30 minutes): ≤0.02
Stability: At -15 to -25°C within specification range for 12 months.



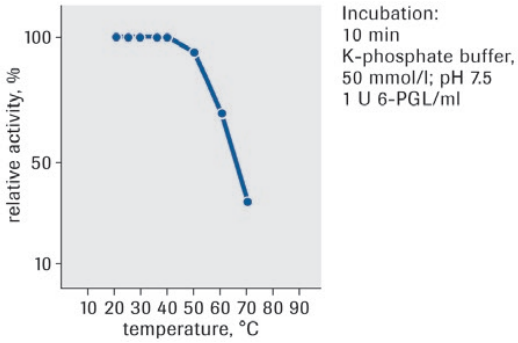
pH optimum



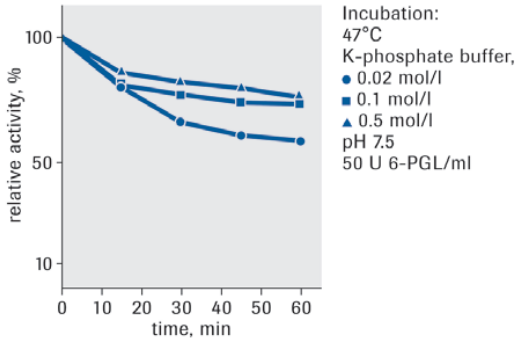
pH stability



Temperature dependence



Thermal stability



Stability at different ionic strength

Pyruvate Kinase

from *Bacillus stearothermophilus*, **lyophilizate**

Catalog number	Pack size
11 462 652 103	custom fill

Will be supplied as "PK, Bacillus stearothermoph., Lyo.". Unit of measure is "MU".

For further processing only.

Application

Use Pyruvate Kinase to catalyze the transfer of a phosphate group from phosphoenolpyruvate (PEP) to ADP, *e.g.,* for the enzymatic determination of potassium or triglycerides.

EC 2.7.1.40

Specification

Appearance: White lyophilizate
Solubilty: Clear, colorless solution in water (c=10 mg/mL)
pH value (+25°C, c=10 mg/mL): 7.6-8.7
Activity (+37°C, PEP): ≥120 U/mg lyophilized material
Specific activity: ≥150 U/mg protein
Protein (Biuret): 0.55-0.95 mg/mg lyophilizate
Contaminants (expressed as percentage of Pyruvate Kinase activity):
''NADH oxidase'' (dA_{365}, 48 hours): ≤0.060
Na (flame photometric): ≤30 µmol/KU
K (flame photometric): ≤0.6 µmol/KU
NH_4 (enzymatic): ≤0.13 mg/KU
Mg (AAS): ≤50 µmol/KU
Mn (AAS): ≤2.4 µmol/KU
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.

Contents

100 mg lyophilized material contains 60 mg protein and 40 mg Tris

Pyruvate Kinase

from rabbit muscle, suspension

Catalog number	Pack size
10 005 533 103	custom fill

Will be supplied as ''Pyruvate Kinase (PK) from Rabbit Muscle''. Unit of measure is ''MU''.

For further processing only.

Application

Use Pyruvate Kinase to catalyze the transfer of a phosphate group from phosphoenolpyruvate (PEP) to ADP, *e.g.*, for the enzymatic determination of potassium or triglycerides.

EC 2.7.1.40

Specification

Appearance: White suspension in ammonium sulfate, 3.2 mol/L, pH approximately 6
pH value: 5.5 - 6.5
Activity (+25°C, PEP): ≥2,000 U/mL solution
Specific activity: ≥200 U/mg protein
Protein (Biuret): ≥10 mg/mL
Ammonium sulfate: 3.2±0.2 mol/L
Contaminants (expressed as percentage of Pyruvate Kinase activity):
ATPase: ≤0.002
Enolase: ≤0.01
Glycerokinase: ≤0.001
Hexokinase: ≤0.002
Lactate dehydrogenase: ≤0.01
Myokinase: ≤0.01
''NADH oxidase'': ≤0.002
Glycerol (enzymatic): ≤10 µg/10 mg
Stability: At +2 to +8°C within specification range for 24 months.

Pyruvate Oxidase

from *E.coli* overproducer, lyophilizate

Catalog number	Pack size
11 418 912 103	custom fill

Will be supplied as "Pyruvate Oxidase Recombinant (*E. coli*)". Unit of measure is "kU".

DRY ICE

For further processing only.

Recombinant oxidoreductase that catalyzes the interconversion of pyruvate to acetyl phosphate.

Application

Use Pyruvate Oxidase in a variety of diagnostic tests, such as for the determination of pyruvate, lactate or aminotransferases.

EC 1.2.3.3

Specification

Appearance: Yellow lyophilizate
Solubility: Clear, yellowish solution in potassium phosphate buffer, 0.1 M, pH 6.5 (c=10 mg/mL)
Activity (+25°C, pyruvate, O_2, P_i): ≥1.5 U/mg lyophilizate
Specific activity: ≥3 U/mg protein
Protein (Biuret): ≥0.4 mg/mg lyophilizate
Contaminants (expressed as percentage of Pyruvate Oxidase activity):
ATPase: No limit
Glucose oxidase: ≤0.001
Aspartate aminotransferase (AST/GOT): ≤0.01
Alanine aminotransferase (ALT/GPT): ≤0.01
apo-Alanine aminotransferase (apo-ALT/apo-GPT) : ≤0.005
Impurities, total: ≤0.02
Lactate oxidase: ≤0.002
α-Ketoglutarate oxidase: ≤0.02
''NADH oxidase'': ≤0.02
Stability: At -15 to -25°C within specification range for 12 months. Store dry.

Sarcosine Oxidase

from *E.coli* overproducer, lyophilizate

Oxidoreductase that catalyzes the demethylation of sarcosine to glycine.

Application

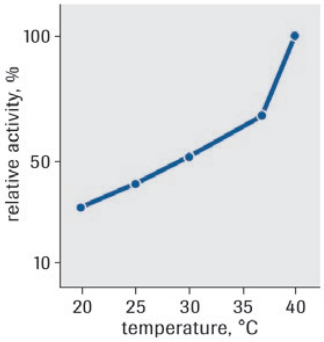
Use Sarcosine Oxidase in diagnostic tests for the determination of creatinine. This can be done using one of two methods:
(1) In combination with Creatinase, Catalog No. 11 799 142 103 and Creatininase, Catalog No. 11 865 471 103.
(2) In combination with Creatinine Deaminase, Catalog No. 11 330 764 103, N-Carbamoylsarcosine Amidase, Catalog No. 11 248 847 103 and N-Methylhydantoinase (ATP-hydrolyzing), Catalog No. 11 288 555 103.

EC 1.5.3.1

Catalog number	Pack size
11 378 856 103	custom fill

Will be supplied as "Sarcosine Oxidase, Recombinant (E. coli)". Unit of measure is "kU".

For further processing only.



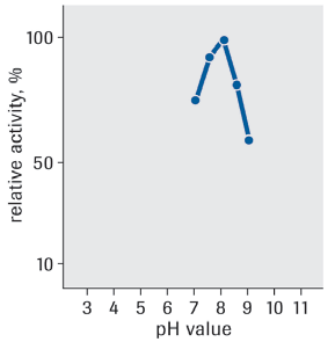
Temperature dependence

Properties

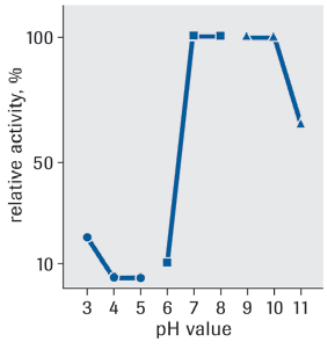
Nomenclature: Sarcosine:oxygen oxidoreductase (demethylating)
Molecular weight: 40 kD (PAGE, native Phast®-System)
Isoelectric point: 5.3 (Phast®-System)
Michaelis constants (Tris buffer, 0.1 mol/L, pH 8.0; Sarcosine):
at +25°C: 3.7 x 10^{-3} mol/L
at +37°C: 6.3 x 10^{-3} mol/L
Inhibitors: Completely inhibited by $ZnCl_2$ (7 mmol/L), $CdCl_2$ (7 mol/L), heavy metals and NaN_3. Chloroacetic amine (0.2%) does not inhibit.
pH optimum: 8.0 (see figure)
Temperature dependence: See figure
pH stability: 7.0-10.0 (see figure)
Thermal stability: Up to +50°C (see figure)
Specificity: Sarcosine Oxidase reacts with sarcosine (100%), N-ethylglycine, 2 mmol/L (4%), L(-)-proline (0.28%), carbamoylsarcosine (0%), and glycine (0%).

Specification

Appearance: Yellow lyophilizate
Solubility: Clear, yellow solution in water (c=10 mg/mL)
pH value (c=10 mg/mL in water): 7.5-8.5
Activity (+25°C, sarcosine): 22-40 U/mg lyophilizate
Specific activity: ≥45 U/mg protein
Protein (Biuret): 0.4-0.6 mg/mg lyophilizate
Contaminants (expressed as percentage of Sarcosine Oxidase activity):
ATPase: ≤0.01
Catalase: ≤10.0
Contaminating oxidases (FOX): ≤0.005
Creatinase: ≤0.001
Creatininase: ≤0.01
Creatinine deaminase: ≤0.001
N-Carbamoylsarcosine amidohydrolase: ≤0.001
N-Methylhydantoin hydrolase: ≤0.001
Stability: At -15 to -25°C within specification range for 12 months. Store dry. Protect from light.

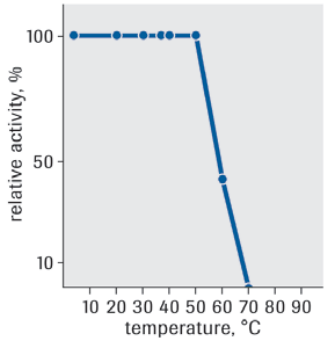


pH optimum



Incubation:
25°C, 360 min
● pH 3.0 – 5.0: citrate buffer, 50 mmol/l
■ pH 6.0 – 8.0: phosphate buffer, 50 mmol/l
▲ pH 9.0 –11.0: glycine buffer, 50 mmol/l
10 U sarcosine OD/ml

pH stability



Incubation:
10 min
phosphate buffer, 0.1 mol/l; pH 8.0
10 U sarcosine OD/ml

Thermal stability

Triose-phosphate Isomerase

from rabbit muscle, suspension

Catalog number	Pack size
10 153 338 103	custom fill

Will be supplied as "Triosephosphate Isomerase, Rabbit Muscle". Unit of measure is "MU".

For further processing only.

Isomerase that interconverts dihydroxyacetone phosphate and D-glyceraldehyde 3-phosphate.

Application

Use Triose-phosphate Isomerase in diagnostic reagents for the determination of aldolase in combination with Glycerol-3-phosphate Dehydrogenase, Catalog No. 10 151 351 103.

EC 5.3.1.1

Specification

Appearance: White suspension in ammonium sulfate
pH value: 5.5-6.5
Specific activity (+25°C, glyceraldehyde-3-phosphate): ≥5,000 U/mg protein
Protein (Biuret): 10±1 mg/mL
Contaminants (expressed as percentage of Triose-phosphate Isomerase activity):
Aldolase: ≤0.01
Glyceraldehyde-3-phosphate dehydrogenase: ≤0.001
Glycerol-phosphate dehydrogenase: ≤0.01
Stability: At +2 to +8°C within specification range for 24 months.

Thrombin

from human plasma, lyophilizate

Catalog number	Pack size
10 582 514 103	custom fill

Will be supplied as "Thrombin (Coagulation Factor II a)". Unit of measure is "U".

For further processing only.

Plasma derived coagulation factor II a that selectively cleaves the Arg-Gly bonds of fibrinogen to form fibrin.

Application

Use Thrombin to generate reference antigens for anti D-dimer antibodies.

EC 3.4.21.5

Specification

Appearance: White lyophilizate
Specific activity (+25°C, Chromozym TH): ≥120 U/mg protein
Protein (Lowry): Approximately 0.004 mg/mg lyophilizate
Factor Xa: ≤3%
Anti HIV: Negative
HBsAg: Negative
Stability: At +2 to +8°C within specification range for 24 months.

Urease

from jack bean, lyophilizate

Hydrolase that catalyzes the breakdown of urea in carbon dioxide and ammonia.

Application

Use Urease in diagnostic tests for the determination of urea in combination with Glutamate Dehydrogenase, Catalog No. 11 434 993 103.

EC 3.5.1.5

Properties

Nomenclature: Urea amidohydrolase
Molecular weight: 480 kD
Isoelectric point: 5.0-5.1
Michaelis constant (Phosphate buffer, pH 7.0; +25°C):
Urea: 1.05 x 10^{-2} mol/L
Inhibitors: Na^+, K^+, NH_4^+; suramin and thiourea are competitive inhibitors.
Activators: P_i
pH optimum: 7.5 (see figure)
Temperature dependence: See figure
pH stability: 6.0-9.5 (see figure)
Thermal stability: Up to +70° C (see figure)
Specificity: Urease is specific for urea.

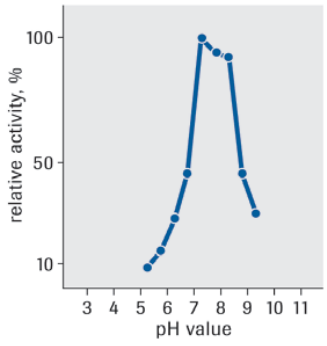
Specification

Appearance: Almost white lyophilizate
Solubility: Clear, colorless solution in water (c=20 mg/mL)
pH value (c=20 mg/mL in water): 6.0-7.0
Activity (+25° C, urea): ≥45 U/mg lyophilizate
Specific activity: ≥600 U/mg protein
Protein (Biuret): ≤0.15 mg/mg lyophilizate
Contaminants (expressed as percentage of Urease activity):
L-Arginase: ≤0.002
NH_4: ≤1.5 µg/KU
Stability: At +2 to +8°C within specification range for 12 months. Store dry.

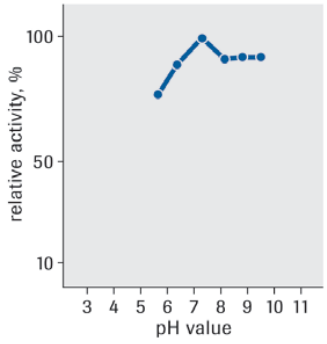
Catalog number	Pack size
11 759 132 103	custom fill

Will be supplied as "Urease, Lyo., SQ". Unit of measure is "MU".

For further processing only.

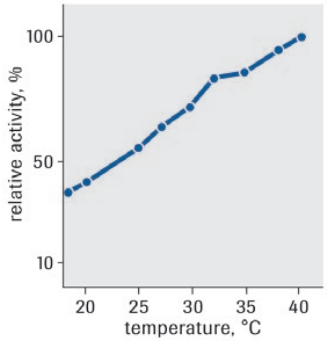


pH optimum

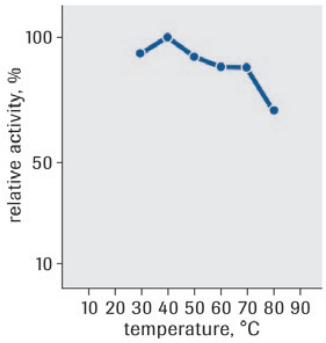


Incubation:
25°C, 24 h
K-phosphate buffer,
0.1 mol/l
urease,
approx. 45 U/ml

pH stability



Temperature dependence



Incubation:
15 min
K-phosphate buffer,
0.1 mol/l; pH 7.0
urease,
approx. 45 U/ml

Thermal stability

Uricase

from *Arthrobacter protophormiae*, **lyophilizate**

Catalog number	Pack size
10 828 475 103	custom fill

Will be supplied as "Uricase from Arthrobact. protophormiae". Unit of measure is "MU".

For further processing only.

Oxidase that catalyzes the oxidation of uric acid to 5-hydroxyisourate which decomposes to allantoin under *in vitro* conditions.

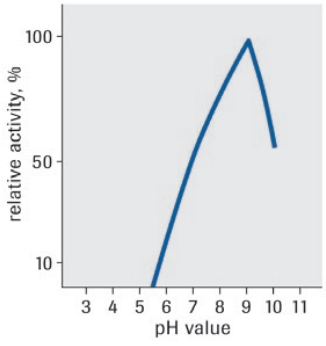
Application

Use Uricase in diagnostic tests for the determination of uric acid and for the elimination of uric acid interferences.

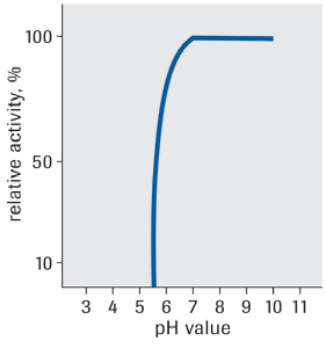
EC 1.7.3.3

Properties

Nomenclature: Urate:oxygen oxidoreductase
Molecular weight: ~170 kD, with four subunits of ~40 kD
Michaelis constant (Phosphate buffer, 0.1 mol/L, pH 8.0; +25°C): Urate: 6.6 x 10^{-5} mol/L
Stabilizer/activators: EDTA is good for stabilization. DTT or DTE may show a stabilizing effect depending on reagent composition. Triton X-100 (1-2 mL/L) may show an activating effect.
Inhibitors: Zn^{2+}, Cl^- (Tris-HCl buffer is not suitable) and borate inhibit strongly. NaN_3, 0.1% does not inhibit.
pH optimum: 9.0 (see figure). Roche uric acid reagent contains phosphate buffer, pH 7.8. For these conditions, high activity and higher stability of the Uricase are achieved.
Temperature dependence: See figure, above +50°C there is a decrease in activity due to lower O_2 concentration.
pH stability: 6.5-10.0 (see figure)
Thermal stability: +20 to +60°C (see figure)
Specificity: Uricase is specific for urea.



pH optimum

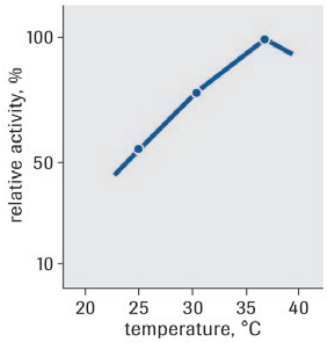


Incubation:
25°C, 24 h
pH 5.5 – 10.0:
potassium phosphate
buffer, 0.1 mol/l
40 U uricase/ml

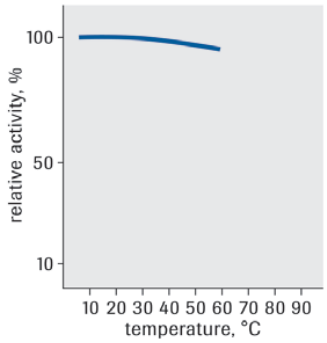
pH stability

Specification

Appearance: White lyophilizate
pH value (c=10 mg/mL in water): 6.7-7.5
Activity (+25°C, urate): ≥20 U/mg lyophilizate
Specific activity: ≥50 U/mg protein
Protein (Biuret): No limit
Contaminant (expressed as percentage of Uricase activity):
Catalase: ≤0.5
Stability: At +2 to +8°C within specification range for 12 months.
Store dry.



Temperature dependence



Incubation:
15 min
phosphate buffer,
0.1 mol/l;
pH 8.0
40 U uricase/ml

Thermal stability

3,5-Dichlorophenolsulfonic Acid

disodium salt

Catalog number	Pack size
10 667 536 103	custom fill

Will be supplied as “3,5-Dichlorophenol Sulfonic Acid, Di-Na”. Unit of measure is “g”.

For further processing only.

Color reagent for diagnostic tests

Application

Use 3,5-Dichlorophenolsulfonic Acid instead of phenol as a component in the trinder reaction.

CAS: 95041-38-6

Properties

Nomenclature: 3.5-Dichloro-2-hydroxy-benzolsulphonic acid disodium salt
Formula: $C_6H_2O_4C_{12}SNa_2$
Molecular weight: 287.0 D

Specification

Appearance: Wite powder
Solubility: Clear, colorless solution in water (c=20 mg/mL)
Dichlorophenolsulphonic acid-Na_2 (from C): ≥98.0%
C (elementary analysis): 24.6-25.6%
H (elementary analysis): 0.69-0.80%
Thin layer chromatography (TLC, silica gel 60 F_{254}, 1-butanol/acetic acid/water=50/15/25): Chromatographically homogeneous; corresponds to reference
Stability: At +15 to +25°C within specification range for 36 months.

4-Aminoantipyrine (4-APP)

crystalline powder

Catalog number	Pack size
10 073 474 103	custom fill

Will be supplied as “4-Aminoantipyrine”. Unit of measure is “kg”.

For further processing only.

Substrate for peroxidase

Application

Use 4-Aminoantipyrine in a variety of diagnostic tests that use the Trinder reaction for the colorimetric determination of analytes, such as for the determination of cholesterol, glucose, creatinine or uric acid.

CAS: 83-07-8

Properties

Formula: $C_{11}H_{13}N_3O$
Molecular weight: 203.25 D

Specification

Appearance: Yellow to redish brown, crystalline powder
Solubility: Clear, colorless solution in water (c=0.1%, w/v)
Melting range: +106 to +109°C
A 370 (c=0.1%, w/v): ≤0.04
UV-spectrum (c=0.002%, w/v): Corresponds to reference
Maximum: 242-246 nm
Minimum: 217-219 nm
Shoulder: 274 nm
Heavy metals (as Pb): ≤5 ppm ≙ 0.0005%
IR-spectrum: Corresponds to reference
4-Aminoantipyrine ($HClO_4$-titration, based on undried substance): ≥98.0%
Purity (HPLC): ≥99.0 area%
Stability: At +15 to +40°C within specification range for 36 months.
Store dry in tightly closed containers.

4-Nitrophenyl-α-D-maltohexaoside

powder

Catalog number	Pack size
10 691 682 103	custom fill

Will be supplied as "4-Nitrophenyl-α-D-malto-hexaoside". Unit of measure is "g".

For further processing only.

Nitrophenyl substrate

Application

Use 4-Nitrophenyl-α-D-maltohexaoside in diagnostic tests for the determination of α-amylase.

CAS: 74173-30-1

Properties

Formula: $C_{42}H_{65}NO_{33}$
Molecular weight: 1112.1 D

Specification

Appearance: White to slightly yellowish, amorphous powder
Solubility: Clear, slightly yellowish solution in water (c=70 mg/mL)
4-Nitrophenyl-maltohexaoside (enzymatically): ≥90%
4-Nitrophenyl-maltohexaoside (HPLC): ≥96.0 area%
Water (K. Fischer): ≤3.0%
4-Nitrophenyl-maltopentaoside (HPLC): ≤1.0 area%
4-Nitrophenyl-maltoheptaoside (HPLC): ≤2.0 area%
4-Nitrophenol, free: ≤0.05%
2-Propanol (GC): ≤6%
Stability: At +2 to +8°C within specification range for 18 months.
Store dry.

4-Nitrophenyl Phosphate (4-NPP)

di-Tris salt

Catalog number	Pack size
10 270 857 103	custom fill

Will be supplied as “4-Nitrophenyl Phosphate, Di-Tris Salt”. Unit of measure is “kg”.

For further processing only.

Substrate for alkaline phosphatase

Application

Use 4-Nitrophenyl Phosphate in diagnostic test for the determination of alkaline phosphatase according to the recommendations of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC).

CAS: 91-81-6

Properties

Formula: $C_6H_4NO_6P(C_4H_{12}NO_3)_2$
Molecular weight: 461.3 D (4-NPP: 219.1 D)

Specification

Appearance: White to slightly yellow, crystalline powder
Solubility: Clear, colorless to slightly yellow solution in water
4-NPP, di-Tris (from content found enzymatically): ≥88%
4-NPP (enzymatic): ≥42%
Tris (titrimetric): ≥46%
Water (K. Fischer): ≤6%
4-NP free: ≤0.07%
Reaction rates (alkaline phosphatase): 100±5%
Stability: At +2 to +8°C within specification range for 24 months.
Store dry. Protect from light.

Benzylidene-4-NP-G7

4,6-Benzylidene-4-nitrophenyl-α-D-maltoheptaoside, lyophilizate

Catalog number	Pack size
11 378 872 103	custom fill

Will be supplied as “Benzylidene-4-NP-G7”. Unit of measure is “kg”.

DRY ICE

For further processing only.

Nitrophenyl substrate

Application

Use Benzylidene-4-NP-G7 in diagnostic tests for the determination of α-amylase.

CAS: 109055-07-4

Properties

Formula: $C_{55}H_{79}NO_{38}$
Molecular weight: 1362.1 D

Specification

Appearance: White to slightly yellowish lyophilizate
Benzylidene-4-NP-G7 (enzymatic): ≥90%
Water (K. Fischer): ≤3%
4-NP-maltoheptaoside (HPLC): ≤1.0 area%
4-Nitrophenol, free: ≤0.01%
Reaction rates (α-amylase):
In Precinorm® U: 100±5%
In Precipath® U: 100±5%
Stability: At -15 to -25°C within specification range for 18 months.
Store dry.

Chromogenic Substrate for Lipase

Catalog number	Pack size
11 034 618 103	custom fill

Will be supplied as "Chromogenic Substrate for Lipase". Unit of measure is "g".

For further processing only.

Substrate for lipase

Application

Use Chromogenic Substrate for Lipase in diagnostic tests for the determination of lipase activity.

CAS: 195833-46-6

Properties

Nomenclature: 1,2-O-Dilauryl-rac-glycero-3-glutaric acid-(6'-methylresorufin)ester
Formula: $C_{45}H_{69}NO_8$
Molecular weight: 752.05 D
$\lambda_{max.substrate}$: 470 nm (Tris-HCl, pH 8.4)
ε_{470}: 57.94 [L x $mmol^{-1}$ x cm^{-1}]
$\lambda_{max.methylresorufin}$: 581 nm (Tris-HCl, pH 8.4)
Melting range: +29 to +31°C
pH optimum: 7.0-9.5
Solubility: Soluble in polar organic solvents, *e.g.,* n-propanol, ethyl acetate, dioxane, methanol, dimethyl sulfoxide. The limit of solubility in n-propanol is 42.9 mg/mL.

Specification

Appearance: Red, smear substance
Chromogenic Lipase Substrate (from C): ≥95%
Chromogenic Lipase Substrate (HPLC): ≥95 area%
C (elementary analysis): 68.2-72.5%
H (elementary analysis): 8.7-9.7%
N (elementary analysis): 1.4-2.4%
Methylresorufin, free (HPLC): ≤0.5 area%
Isomer (HPLC): ≤2 area%
Stability: At +2 to +8°C within specification range for 36 months.

Background information

Reagent proposal for lipase test

The sensitivity of this lipase test is especially influenced by the extinction of the substrate solution, the concentration of taurodesoxycholate, the pH value, and the molarity of the Tris buffer.

Final test concentration of the substrate solution:
chrom. Lipase Substrate: 0.24 mmol/L (=180 mg/L)
colipase: 0.98 mg/L
taurodesoxycholate *(see buffer solution)
$CaCl_2$:0.1 mol/L
tartrate buffer, pH 4.0: 1.6 mmol/L
stabilizers
The lipase substrate has to be dissolved in a small quantity of an organic solvent (*e.g.* n-propanol) first. Under vigorous stirring this organic solution should be injected into the tartare buffered aqueous solution with a thin beam. (The lipase substrate starts to hydrolyze at alkaline pH values.) The lipase substrate containing solution should be a micro-emulsion with
an extinction of about 0.5 E. (Lower extinction of the reagent results in measurement of nonspecific serum esterases.) Stabilizers like mannitol, polywax 4000 and co-emulsifiers like lecithin, phosphoryl choline or dilauryl-glycerol-sulfate improve the stability of the micro-emulsion.

Final test concentration of the buffer solution:
Tris-HCl, pH 8.4: 41 mmol/L
taurodesoxycholate: *7.2 mmol/L (total)
desoxycholate: 1.77 mmol/L
Wavelength: 578 nm or 580 nm
Temperature: +25°C, +30°C or +37°C, respective
Buffer solution: 1 mL
Substrate solution: 0.2 mL
Sample volume: 0.02 mL
Assay time: 2 to 10 minutes
Start of reaction: with substrate

Ethylidene-4-NP-G7

Ethyliden-4-nitrophenyl-α-D-maltoheptaosid (EPS), powder

Nitrophenyl substrate

Application

Use Ethylidene-4-NP-G7 in diagnostic tests for the determination of α-amylase and pancreatic α-amylase according to the recommendations of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC).

Catalog number	Pack size
10 880 078 103	custom fill

Will be supplied as “Ethylidene-4-NP-G7”. Unit of measure is “kg”. Additional products: OEM reagents for the determination of α-amylase and pancreatic amylase, as well as specific inhibitory antibodies. Catalog Nos. 11 543 598 103 and 11 543 601 103 for the detection of pancreatic amylase.

For further processing only.

CAS: 96597-16-9

Properties
Formula: $C_{50}H_{77}NO_{38}$
Molecular weight: 1300.1 D

Specification
Appearance: White to slightly yellowish, amorphous powder
Solubility: Clear, slightly yellowish solution in water (c=70 mg/mL)
EPS (enzymatic): ≥90%
Water (K. Fischer): ≤3%
pNP-G7 (enzymatic): ≤0.1%
pNP, free: ≤0.01%
Reaction rates (α-amylase):
In Precinorm® U: 95-105%
In Precipath® U: 95-105%
Stability: At +2 to +8°C within specification range for 24 months.
Store dry.

Glupa-carboxylate
monoammonium salt

Substrate for γ-glutamyltransferase

Catalog number	Pack size
10 413 151 103	custom fill

Will be supplied as "Glupa-carboxylate, Monoammonium Salt". Unit of measure is "kg".

For further processing only.

Application
Use Glupa-carboxylate in diagnostic tests for the determination of γ-glutamyltransferase, according to the recommendations of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC).

CAS: 63699-78-5

Properties
Formula: $C_{12}H_{12}N_3O_7NH_4$
Molecular weight: 328.3 D

Specification
Appearance: White to yellowish crystalline powder
Solubility: Clear, yellow solution in water (c=100 mg/mL), free of fuzz
pH value: 4.0-6.0
Molar rotation [α] 25/D: +32.0±2.0°
Melting range (Kofler): Approximately +170 to +180°C
Glupa-carboxylate, free acid (enzymatic): ≥87%
Glupa-carboxylate (HPLC): ≥99 area%
Water (K. Fischer): ≤6.2%
NH_4 (Neßler's reagent): 5.2±1%

5-Amino-2-nitrobenzoate (HPLC): ≤0.1 area%
α-Glupa-carboxylate (HPLC): ≤0.4 area%
Thin layer chromatography (silica gel F; n-butanol/glacial acetic acid/ H_2O = 50/15/25; UV, with Nihydrin): Chromatographically homogeneous
A_{405} (Glupa-carboxylate, 6 mmol/L): 0.65-0.80
Stability: At +2 to +8°C within specification range for 24 months.
Protect from light.

TOOS

(N-Ethyl-N-(2-hydroxy-3-sulfopropyl)-m-toluidine, monosodium salt, dihydrate

Catalog number	Pack size
11 650 670 103	custom fill

Will be supplied as "TOOS". Unit of measure is "kg".

For further processing only.

Substrate for peroxidase

Application

Use TOOS together with 4-Aminoantipyrine in an indicator reaction using peroxidase to form a quinoneimine dye.

CAS: 679787-10-1

Properties

Nomenclature: Dihydrate (N-Ethyl-N-(2-hydroxy-3-sulfopropyl)-m-toluidine
Formula: $C_{12}H_{18}NO_4SNa$ x 2 H_2O
Molecular weight: 331.37 D

Specification

Appearance: White to slightly bluish crystallizate
TOOS, mono-Na x 2 H_2O (from C): ≥98.0%
C (elementary analysis): 42.6-46.5%
H (elementary analysis): 6.3-6.8%
N (elementary analysis): 3.8-4.7%
Water (K. Fischer): 7.0-12.0%
Heavy metals (as Pb): ≤20 ppm
Stability: At +15 to +25°C within specification range for 24 months.

Tribromo-hydroxybenzoic acid

crystallizate

Color reagent for diagnostic tests

Application

Use Tribromo-hydroxybenzoic acid instead of phenol as a component in the trinder reaction.

CAS: 14348-40-4

Properties

Formula: $C_7H_3O_3Br_3$
Molecular weight: 374.8 D

Specification

Appearance: White crystallizate
Solubility: Clear, colorless solution in NaOH, 0.1 mol/L (c=20.9 mg/mL)
A_{405} (c=20.9 mg/mL, in NaOH, 0.1 mol/L): ≤0.020
Melting range: +143 to +148°C
Thin-layer chromatography (HPTLC): Corresponds to reference
2,4,6-Tribomo-hydroxybenzoic acid (alkalimetric): ≥98.0%
Stability: At +15 to +25°C within specification range for 36 months.

Catalog number	Pack size
10 755 745 103	custom fill

Will be supplied as “Tribrom-Hydroxybenzoic acid”. Unit of measure is “g”.

For further processing only.

L(+)-Alanine

crystalline powder

Catalog number	Pack size
10 136 921 103	custom fill

Will be supplied as “L(+)-Alanin”. Unit of measure is “kg”.

For further processing only.

Substrate for alanine aminotransferase

Application

Use L(+)-Alanine in diagnostic tests for the determination of alanine aminotransferase (ALT).

CAS: 56-41-7

Properties

Formula: $C_3H_7NO_2$
Molecular weight: 89.09 D

Specification

Appearance: White, crystalline powder or crystals
Solubility: Easily soluble in water and mineral acids, insoluble in organic solvents
Appearance in buffer solution: Clear, colorless solution in phosphate buffer (c=0.9%, w/v, pH 7.4)
Microbiological test: Corresponds
Heavy metals (as Pb): ≤20 ppm ≙ 0.002%
Sulfate ash: ≤0.1%
Thin layer chromatography: Corresponds to reference
Water (K.Fischer): ≤1.0%
L-alanine ($HClO_4$ titration, based on anhydrous substance): 98.5-100.5%
L-alanine (enzymatic, based on anhydrous substance): 97.0-105.0%
Stability: At +15 to +40°C within specification range for 36 months. Store dry in tightly closed containers.

α-Ketoglutarate (2-Oxoglutarate)

free acid

Catalog number	Pack size
10 156 736 103	custom fill

Will be supplied as “α-Ketoglutaric Acid, Free Acid”. Unit of measure is “kg”.

For further processing only.

Substrate for transaminases and glutamate dehydrogenase

Application

Use α-Ketoglutarate in a variety of diagnostic tests, such as for the determination of alanine aminotransferase, aspartate aminotransferase, ammonia, urea and glutamate dehydrogenase.

CAS: 328-50-7

Properties
Formula: $C_5H_6O_5$
Molecular weight: 146.1 D

Specification
Appearance: White crystallizate
Solubility: Clear, colorless solution in water (c=50 mg/mL)
A_{405} (c=50 mg/ml in water, against water): ≤0.020
Melting range: +113 to +117°C
α-Ketoglutaric acid (enzymatic): ≥98%
Water (K. Fischer): ≤1%
NH_4 (enzymatic): ≤0.1%
Heavy metals (as Pb): ≤10 ppm
Bioburden: ≤100 CFU/g
Reaction rates (Glutamate pyruvate transaminase (ALT)): ≥95%
Reaction rates (Glutamate oxalacetate transaminase(AST)): ≥95%
Stability: At +15 to +25°C within specification range for 36 months.

α-Ketoglutarate (2-Oxoglutarate)
disodium salt, dihydrate

Substrate in enzymatic reactions with glutamate dehydrogenase or transaminases

Catalog number	Pack size
10 040 584 103	custom fill

Will be supplied as "α-Ketoglutarate (a-Oxoglutarate), Di-Na". Unit of measure is "kg".
Additional formulation: Crystallized free acid, Catalog No. 10 156 736 103

For further processing only.

Application
Use α-Ketoglutarate in a variety of diagnostic tests, such as for the determination of glutamate dehydrogenase, ammonia, alanine- and aspartate aminotransferases and urea. The dihydrate formulation is well suited for dry chemistry tests.

CAS: 305-72-6

Properties
Formula: $C_5H_8O_7Na_2$
Molecular weight: 226.1 D (α-KG: 146.1 D)

Specification
Appearance: White, crystalline powder
Solubility: Clear, colorless solution in water, pH 7.3 (c=200 mg/mL)
A_{405} (against water): ≤0.020
α-Ketoglutarate, salt (based on value found enzymatically): ≥97%
α-Ketoglutarate, free acid (enzymatic): ≥63%
Na (flame photometric): 20.5±1%
Water (K. Fischer): 15±2%
Heavy metals (as Pb): ≤20 ppm
Stability: At +15 to +25°C within specification range for 24 months.

α-Ketoglutarate (2-Oxoglutarate)

disodium salt

Catalog number	Pack size
10 266 400 103	custom fill

Will be supplied as "α-Ketoglutarate, Di-Na, (M 190.1 g/mol)". Unit of measure is "kg". Additional formulation: Crystallized free acid, Catalog No. 10 156 736 103

For further processing only.

Substrate in enzymatic reactions with glutamate dehydrogenase or transaminases

Application

Use α-Ketoglutarate in a variety of diagnostic tests, such as for the determination of glutamate dehydrogenase, ammonia, alanine- and aspartate aminotransferases and urea. The dissodium formulation is well suited for liquid tests.

CAS: 305-72-6

Properties

Formula: $C_5H_4O_5Na_2$
Molecular weight: 190.1 D (α-KG: 146.1 D)

Specification

Appearance: White, crystalline powder
Solubility: Clear, colorless solution in water, pH 7.3 (c=200 mg/mL)
A_{405} (c=10 mg/mL in water, against water): ≤0.020
α-Ketoglutarate, salt (based on value found enzymatically): ≥97.5%
α-Ketoglutarate, free acid (enzymatic): ≥74%
Na (flame photometric): 24±2%
Water (K. Fischer): ≤2%
Heavy metals (as Pb): ≤20 ppm
Stability: At +15 to +25°C within specification range for 24 months.

α-Ketoglutarate (2-Oxoglutarate) for potassium test

free acid

Catalog number	Pack size
11 332 775 103	custom fill

Will be supplied as "α-Ketoglutaric Acid for Potassium Test". Unit of measure is "kg".

For further processing only.

Substrate for transaminases and glutamate dehydrogenase

Application

Use α-Ketoglutarate for enzymatic potassium tests especially to remove ammonia from the reaction.

CAS: 328-50-7

Properties

Formula: $C_5H_6O_5$
Molecular weight: 146.1 D

Specification

Appearance: White crystallizate
Solubility: Clear, colorless solution in water (c=50 mg/mL)
A_{405} (c=50 mg/mL in water, against water): ≤0.020
Melting range: +113 to +117°C
α-Ketoglutaric acid (enzymatic): ≥98%
Water (K. Fischer): ≤1%
NH_4 (enzymatic): ≤0.1%
Na (AES): ≤500 ppm
K (AES): ≤10 ppm
Heavy metals (as Pb): ≤10 ppm
Bioburden: ≤100 CFU/g
Reaction rates (Glutamate pyruvate transaminase (ALT)): ≥95%
Reaction rates (Glutamate oxalacetate transaminase (AST)): ≥95%
Stability: At +15 to +25°C within specification range for 36 months.

Creatine Phosphate

disodium salt

Catalog number	Pack size
10 003 506 103	custom fill

Will be supplied as ''Creatine Phosphate, Disodium Salt''. Unit of measure is ''kg''.

For further processing only.

Substrate for creatine kinase (reverse reaction)

Application

Use Creatine Phosphate in diagnostic tests for the determination of creatine kinase, according to the recommendations of the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC).

CAS: 922-32-7

Properties

Molecular weight: 327.2 D (CP: 211.1 D)

Specification

Appearance: White crystals
Solubility: Clear, colorless solution in water (c=150 mg/mL), free from fuzz
pH value (c=10 mg/mL in water): 7.7-8.7
Creatine-P-Na_2 x 4 H_2O (based on value found enzymatically): ≥97%
Creatine-P (enzymatic): ≥63%
Creatine-P (from $P_{organic}$): ≥63%
Na (flame photometric): 14±1%
Water (K. Fischer): 22±2%
$P_{organic}$ (P_{total} - P_i): ≥9.25%
P_{total}: ≥9.25%
P_i (acid labile): ≤0.5%
P_i (Fiske and Subbarow): ≤1.5%
PP_i (enzymatic): ≤0.02%

ATP (enzymatic, with hexokinase/G6P-DH): ≤0.002%
Sulfate (qualitative): Negative
Creatine, free: ≤0.5%
Glucose-6-P (enzymatic): ≤0.006%
PEP (enzymatic): ≤0.05%
Pyruvate (enzymatic): ≤0.02%
Kinetic of creatine kinase reaction: Corresponds to standard
Reaction rates (creatine kinase): 95-105%
$\mathbf{A}_{334}$ (c=9 mL/mL water): ≤0.005
$\mathbf{A}_{334}$ (against reaction mixture CK NAC active): ≤0.040
$\mathbf{A}_{340}$ (hydrous solution): ≤0.120
Stability: At +2 to +8°C within specification range for 36 months.

D(-)-Lactate

monolithium salt

Substrate for D-lactate dehydrogenase

Catalog number	Pack size
10 151 874 103	custom fill

Will be supplied as "D(-)-Lactate, Monolithium Salt". Unit of measure is "g".

For further processing only.

Application

Use D(-)-Lactate as a standard in tests for lactic acid.

CAS: 27848-80-2

Properties

Formula: $C_3H_5O_3Li$
Molecular weight: 96.0 D (Lactate: 89.1 D, Lactic acid: 90.1 D)

Specification

Appearance: White, crystalline powder
D(-)-Lactate (enzymatic, as anion): ≥91%
Li (flame photometric): 7.0±1.0%
L(+)-Lactate (enzymatic, as anion): ≤0.2%
Stability: At +15 to +25°C within specification range for 36 months.

Di(adenosine-5'-)penta-phosphate

trilithium salt

Inhibitor of adenylate kinase

Catalog number	Pack size
10 161 624 103	custom fill

Will be supplied as "Di(adenosine-5'-)penta-phosphate, Tri-Li". Unit of measure is "g".

For further processing only.

Application

Use Di(adenosine-5'-)penta-phosphate in diagnostic reagents for the determination of creatine kinase to inhibit adenylate kinase in the reaction.

CAS: 75522-97-3

Properties

Formula: $C_{20}H_{26}N_{10}O_{22}P_5Li_3$
Molecular weight: 934.2 D (Ap5A: 916.4 D)

Specification

Appearance: White to slightly yellowish lyophilizate
Solubility: Clear, colorless to slightly yellowish solution in water (c=10 mg/mL)
Ap5A-Li$_3$ (from $P_{organic}$): ≥91%
Ap5A (A_{260}, ε=26.4 [L x mmol^{-1} x cm^{-1}]): ≥90%
Ap5A (from $P_{organic}$): ≥90%
Ap5A (HPLC): ≥95 area%
Li (flame photometric): 2.1±0.3%
Water (K. Fischer): ≤5%
$P_{organic}$ (P_{total}-P_i): ≥15.2%
P_i: ≤1.5%
Thin layer chromatography (PEI-cellulose, KH_2PO_4, 0.75 mol/L): Chromatographically homogeneous
A_{250}/A_{260}: 0.79±0.04
A_{280}/A_{260}: 0.21±0.03
A_{290}/A_{260}: 0.02±0.02
Stability: At +2 to +8°C within specification range for 24 months.

Glucose-1,6-diphosphate

tetra(cyclohexylammonium) salt

Substrate in diagnostic tests

Catalog number	Pack size
10 150 827 103	custom fill

Will be supplied as ''Glucose-1,6-diphosphate, Tetra-CHA Salt''. Unit of measure is ''g''.

For further processing only.

Application

Use Glucose-1,6-diphosphate in diagnostic tests for the determination of inorganic phosphate and sucrose.

CAS: 10139-18-1

Properties

Formula: $C_6H_{14}O_{12}P_2$ x $(C_6H_{14}N)_4$ x 4 H_2O
Molecular weight: 808.9 D (Glucose-1,6-P_2: 340.1 D)

Specification

Appearance: Yellowish crystallizate
Glucose-1,6-P_2(CHA)$_4$ x 4 H_2O: 93.0-105.0%
Glucose-1,6-P_2 (from $P_{organic}$): 39.0-44.0%
CHA (titrimetric): 46.-50.0%
Water (K. Fischer): 6.0-10.0%

$P_{organic}$ (P_{total} - P_i): 7.10–8.00%
P_i: ≤0.30%
Stability: At +15 to +25°C within specification range for 36 months.

Glucose-6-phosphate
disodium salt

Catalog number	Pack size
10 153 079 103	custom fill

Will be supplied as ''Glucose-6-phosphate, Disodium Salt''. Unit of measure is ''g''.

For further processing only.

Substrate for glucose-6-phosphate dehydrogenase

Application
Use Glucose-6-phosphate in diagnostic tests for the determination of glucose-6-phosphate dehydrogenase.

CAS: 3671-99-6

Properties
Formula: $C_6H_{11}O_9PNa_2$
Molecular weight: 304.2 D (Glucose-6-P: 260.2 D)

Specification
Appearance: White lyophilizate
Solubility: Clear solution in water (c= 50 mg/mL)
Glucose-6-P (enzymatic): ≥77%
Glucose-6-P (from $P_{organic}$): ≥77%
Na (flame photometric): 12.5±1%
Water (K. Fischer): 8±2%
$P_{organic}$ (P_{total} - P_i - $P_{fructose\text{-}6\text{-}P}$): ≥8.9%
P_i: ≤0.6%
Fructose-6-P (enzymatic): ≤2%
Glucose (enzymatic): ≤0.2%
Stability: At +15 to +25°C within specification range for 24 months.
Store dry.

N-Acetyl-L-Cysteine
crystallizate

Catalog number	Pack size
10 068 365 103	custom fill

Will be supplied as “N-Acetyl-L-Cystein”. Unit of measure is “kg”.

For further processing only.

Activator of creatine kinase

Application
Use N-Acetyl-L-Cysteine in diagnostic tests for the determination of creatine kinase, where it is used to reactivate creatine kinase as recommended by the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC).

CAS: 616-91-1

Properties

Formula: $C_5H_9NO_3S$
Molecular weight: 163.19 D

Specification

Appearance: White crystals
Solubility: Clear, colorless solution in water (c=50 mg/mL)
Melting range: +107 to +113°C
Specific rotation [α] 25/D: +3.0° to +5.0°
IR-spectrum: Corresponds to reference
Purity (HPLC): ≥99.0 area%
N-Acetyl-L-Cysteine (content from SH-groups): ≥99.0%
N-Acetyl-L-Cysteine (alkalimetric): ≥99.0%
N-Acetyl-L-Cysteine (content from N): ≥99.0%
Content of nitrogen (elementary analysis): ≥8.5%
Screening analysis:
Particle size ≥60 µm: ≤15%
Particle size ≥140 µm: ≤50%
Heavy metals (as Pb): ≤5 ppm
Fe (AAS): ≤2.0 ppm
Cu (AAS): ≤1.0 ppm
Mn (AAS): ≤1.0 ppm
Bioburden: 100 CFU/g
Country of origin: China, USA, Canada
Heat treatment (only chinese goods): Corresponds to reference
Stability: At +15 to +40°C within specification range for 24 months.

Phosphoenolpyruvate (PEP)

tri(cyclohexylammonium) salt

Substrate for phosphoenolpyruvate carboxylase

Application

Use Phosphoenolpyruvate in diagnostic tests for the determination of carbon dioxide, creatinine or pyruvate kinase.

CAS: 138-08-9

Properties

Formula: $C_3H_2O_6P\ (C_6H_{14}N)_3 \times H_2O$
Molecular weight: 483.3 D (PEP: 168.0 D)

Catalog number	Pack size
10 005 185 103	custom fill

Will be supplied as ''Phosphoenolpyruvate (PEP), CHA-Salt''. Unit of measure is ''kg''.

For further processing only.

Specification

Appearance: Colorless, crystallizate
PEP salt (based on value found enzymatically): ≥96%
PEP (enzymatic): ≥34.5%
CHA (titrimetric with perchloric acid): 57-67%
Water (K. Fischer): ≤4.5%
P_i (Fiske and Subbarow): ≤0.6%
Pyruvate (enzymatic): ≤0.1%
Stability: At +2 to +8°C within specification range for 24 months.
Additional formulation crystallized monosodium salt, Catalog No. 10 152 960 103

Phosphoenolpyruvate (PEP)

monosodium salt

Substrate for phosphoenolpyruvate carboxylase

Catalog number	Pack size
10 152 960 103	custom fill

Will be supplied as "Phosphoenolpyruvate (PEP), Mono-Na Salt". Unit of measure is "g".

For further processing only.

Application

Use Phosphoenolpyruvate in diagnostic tests for the determination of carbon dioxide, creatinine or pyruvate kinase.

CAS: 138-08-9

Properties

Formula: $C_3H_4O_6PNa \times H_2O$
Molecular weight: 208.0 D (PEP: 168.0 D)

Specification

Appearance: White, crystalline powder
PEP-Na x H_2O (based on value found enzymatically): ≥94%
PEP (enzymatic): ≥76.0%
Na (flame photometric): 9-13%
Water (K. Fischer): 8-10%
P_i: ≤0.6%
Pyruvate (enzymatic): ≤0.1%
Stability: At +2 to +8°C within specification range for 24 months.

Phosphoenolpyruvate (PEP), for potassium test

tri(cyclohexylammonium) salt

Catalog number	Pack size
11 333 968 103	custom fill

Will be supplied as “PEP, tri-CHA for Potassium Test”. Unit of measure is “kg”.
Additional formulation: Crystallized monosodium salt, Catalog No. 10 152 960 103

For further processing only.

Substrate for phosphoenolpyruvate carboxylase

Application

Use Phosphoenolpyruvate as a substrate for pyruvate kinase, stimulated by potassium, for the enyzymatic determination of potassium.

CAS: 138-08-9

Properties

Formula: $C_3H_2O_6P\ (C_6H_{14}N)_3\ x\ H_2O$
Molecular weight: 483.3 D (PEP: 168.0 D)

Specification

Appearance: Colorless crystallizate
PEP-(CHA)$_3$ (from content found enzymatically): ≥96%
PEP (enzymatic): ≥34.5%
CHA (titrimetric): 57-67%
Water (K. Fischer): ≤4.5%
P_i: ≤0.6%
Pyruvate (enzymatic): ≤0.1%
Na (AES) : ≤100 ppm
K: ≤10 ppm
Stability: At +2 to +8°C within specification range for 24 months.

Pyruvate

monosodium salt

Catalog number	Pack size
10 005 525 103	custom fill

Will be supplied as “Pyruvate Monosodium Salt”. Unit of measure is “g”.

For further processing only.

Substrate for many enzymes, such as lactate dehydrogenase and pyruvate kinase.

Application

Use Pyruvate in diagnostic tests for the determination of lactate dehydrogenase.

CAS: 57-60-3

Properties

Formula: $C_3H_3O_3Na$
Molecular weight: 110.0 D

Specification

Appearance: White, crystalline powder
Pyruvate-Na (from content found enzymatically): 96-103%
Pyruvate (enzymatic, based on anion): 77-81%
Na (flame photometric): 20.5-21.5%
Bioburden: ≤100 CFU/g
Heavy metals (as Pb): ≤10 ppm
Stability: At +15 to +25°C within specification range for 18 months.

S-Butyrylthiocholine Iodide

crystallizate

Substrate for cholinesterase

Catalog number	Pack size
10 034 614 103	custom fill

Will be supplied as "S-Butyrylthiocholine Iodide". Unit of measure is "kg".

For further processing only.

Application

Use S-Butyrylthiocholine Iodide in diagnostic tests for the determination of cholinesterase.

CAS: 1866-16-6

Properties

Formula: $C_9H_{20}NOSJ$
Molecular weight: 317.2 D

Specification

Appearance: Colorless crystallizate
Solubility: Clear, colorless solution in water (c=70 mg/mL)
Melting range: +172 to +174°C
Butyrylthiocholine iodide (titrimetric) : ≥98.0%
Thiocholine iodide, free: ≤0.15%
Reaction rates (inhibitors of choline esterase): 100±5%
Stability: At +2 to +8°C within specification range for 24 months.

Immunology

MAB<CK-MB>M-7.4.5 IgG

lyophilizate

Catalog number	Pack size
11 719 815 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as “MAK<CK-MB>M-7.4.5 IGG”. Unit of measure is “mg”.

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<CK-MB>M-7.4.5 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Antibody class: IgG1, kappa

Properties

MAB<CK-MB>M-7.4.5 IgG is a monoclonal antibody directed to creatine kinase MB. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner to MAB<CK-MB>M-6.12.47 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 60 months. Avoid repeated freezing and thawing.

MAB<CK-MB>M-6.12.47 IgG

lyophilizate

Catalog number	Pack size
11 719 823 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as “MAK<CK-MB>M-6.12.47 IGG”. Unit of measure is “mg”.

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<CK-MB>M-6.12.47 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Antibody class: IgG1, kappa

Properties

MAB<CK-MB>M-6.12.47 IgG is a monoclonal antibody directed to creatine kinase MB. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<CK-MB>M-7.4.5 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 60 months. Avoid repeated freezing and thawing.

MAB<CK-MM>Mix

frozen solution

For measurement of human creatine kinase isoenzyme (CK-MB), which is a well established tool in confirming the diagnosis of acute myocardial infarction.

Catalog number	Pack size
04 688 457 103	1 mL, 10 mL, 50 mL, 100 mL, 1000 mL

Will be supplied as “Mab<CK-MM>Mix”. Unit of measure is “L”.

DRY ICE

For further processing only.

Application

MAB<CK-MM>Mix is a main compound of the CK-MB assay.

Product description

Immunogen: Human creatinine kinase isoenzyme MM (h-CK-MM)
Inhibitor capacity (for information only):
4500 U/L CK-MM: ≥99.6%
300 U/L CK-BB: ± 5%

Properties

The MAB<CK-MM>Mix consists of four highly specific monoclonal mouse antibodies directed to human creatinin kinase isoenzyme MM (h-CK-MM). The frozen solution contains protein, potassium phosphate buffer and sodium chloride. No preservative are added.

Specification

Appearance: Clear to slightly opalescent solution after thaw
pH value (+25°C): 7.4-7.6
HPLC (Mono Q, basic material): ≥80%
Protein (BCA): 10.8-13.2 mg/mL
Aggregates (TSK 3000): ≤10%
Inhibitor capacity:
CK-MM 4,500 U/l (+37°C): ≥96%
CK-BB 300 U/l (+37°C): ±5%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 36 months. Avoid repeated freezing and thawing.

Background information

Human creatine kinase isoenzyme CK-MB consist of two subunits: CK-M and CK-B. By inhibiting the CK-M subunit, the creatine kinase reaction is triggered exclusively by the β subunit of creatine kinase, which accounts for one-half of the activity of CK-MB.

MAB<AFP>M-LJ738 IgG

lyophilizate

Catalog number	Pack size
11 492 101 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<AFP>M-LJ738-IGG(DE)". Unit of measure is "g active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<AFP>M-LJ738 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Antibody class: IgG1, kappa

Properties

MAB<AFP>M-LJ738 IgG is a monoclonal antibody directed to alpha fetoprotein. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<AFP>M-TU11 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 60 months. Avoid repeated freezing and thawing.

MAB<AFP>M-TU11 IgG

lyophilizate

Catalog number	Pack size
11 492 080 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<AFP>M-TU11-IGG(DE)". Unit of measure is "g active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<AFP>M-TU11 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description
Antibody class: IgG2a, kappa

Properties
MAB<AFP>M-TU11 IgG is a monoclonal antibody directed to alpha fetoprotein. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<AFP>M-LJ738 IgG.

Specification
Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Ccorresponds to specification
Stability: At -15 to -25°C within specification range for 60 months. Avoid repeated freezing and thawing.

MAB<CEA>M-TU2 IgG
lyophilizate

Catalog number	Pack size
11 353 713 103	10 mg (samples), 100 mg

Will be supplied as “MAK<CEA>M-TU2-IGG *SQ”. Unit of measure is “mg active ingredient”.

For further processing only.

Application
MAB<CEA>M-TU2 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description
Immunogen: Carcinoembryonic antigen (CEA)
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa

Properties
MAB<CEA>M-TU2 IgG is a monoclonal antibody directed to carcinoembryonic antigen. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride; pH 7.5. No preservatives are added. Sandwich partner for MAB<CEA>M-TU3 IgG.

Specification
Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=5mg/mL)
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<CEA>M-TU3 IgG

lyophilizate

Catalog number	Pack size
10 777 498 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as “MAK<CEA>M-TU3-IGG(DE)”. Unit of measure is “mg active ingredient”.

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<CEA>M-TU3 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Antibody class: IgG1, kappa

Properties

MAB<CEA>M-TU3 IgG is a monoclonal antibody directed to carcinoembryonic antigen. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride; pH 7.5. No preservatives are added. Sandwich partner for MAB<CEA>M-TU2 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear, to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<DD>M-1.2.57 IgG

lyophilizate

Catalog number	Pack size
12 156 903 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as “MAK<DD>M-1.2.57-IgG(SP/Q)”. Unit of measure is “g active ingredient”.

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<DD>M-1.2.57 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Human fibrinogen cleavage product D-Dimer
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa

Properties

MAB<DD>M-1.2.57 IgG is a monoclonal antibody directed to human fibrinogen cleavage product D-Dimer. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride.

No preservatives are added. Sandwich partner for MAB<DD>M-2.1.16 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret) : ≥0.6 mg/mg lyophilizate
Aggregated IgG (HPLC / TSK 3000): ≤10 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<DD>M-2.1.16 IgG

lyophilizate

Catalog number	Pack size
12 045 206 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<DD>M-2.1.16-IgG(SP/Q)". Unit of measure is "g active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<DD>M-2.1.16 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Human fibrinogen cleavage product D-Dimer
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa

Properties

MAB<DD>M-2.1.16 IgG is a monoclonal antibody directed to human fibrinogen cleavage product D-Dimer. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<DD>M-1.2.57 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Aggregated IgG (HPLC / TSK 3000): ≤10 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<Ferr>M-3.170 IgG

lyophilizate

Catalog number	Pack size
11 547 089 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<Ferr>M-3.170-IgG". Unit of measure is "g active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<Ferr>M-3.170 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Human liver ferritin
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa
Cross reactivity to: Spleen ferritin 74%; heart ferritin 11%

Properties

MAB<Ferr>M-3.170 IgG is a monoclonal antibody directed to human liver ferritin. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<Ferr>M-4.184 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<Ferr>M-4.184 IgG

lyophilizate

Catalog number	Pack size
11 547 119 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<Ferr>M-4.184-IgG". Unit of measure is "g active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<Ferr>M-3.170 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Human liver ferritin
Spleen donor: Mouse Balb/c
Antibody class: IgG2a, kappa
Cross reactivity to: Spleen ferritin 60%; heart ferritin 11%

Properties

MAB<Ferr>M-4.184 IgG is a monoclonal antibody directed to human liver ferritin. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<Ferr>M-3.170 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<FSH>M-1.303 IgG

lyophilizate

Catalog number	Pack size
11 493 540 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<FSH>M-1.303-IGG". Unit of measure is "mg active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<FSH>M-1.303 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Human follicle stimulating hormone (FSH)
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa
Cross reactivity to: Human chorionic gonadotropin (HCG) <0.1%; Luteinizing hormone (LH) <1.5%; Thyroid stimulating homone (TSH) <2.5%

Properties

MAB<FSH>M-1.303-IgG is a monoclonal antibody directed to human follicle stimulating hormone. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<FSH>M-W3 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification

Stability: At -15 to -25°C within specification range for 24 months.
Avoid repeated freezing and thawing.

MAB<FSH>M-W3g IgG

lyophilizate

Catalog number	Pack size
11 493 531 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<FSH>M-W3-IGG". Unit of measure is "mg active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<FSH>M-W3 IgG qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Human follicle stimulating hormone (FSH)
Spleen donor: Mouse Balb/c
Antibody class: IgG2a, kappa
Cross reactivity to: Human chorionic gonadotropin (HCG) not detectable; Luteinizing hormone (LH) <1.0%; Thyroid stimulating hormone (TSH) <3.5%

Properties

MAB<FSH>M-W3 IgG is a monoclonal antibody directed to human follicle stimulating hormone. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<FSH>M-1.303 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months.
Avoid repeated freezing and thawing.

MAB<HCG>M-INN2 IgG

lyophilizate

Catalog number	Pack size
03 116 263 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<HCG>M-INN2-IgG". Unit of measure is "mg active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<HCG>M-INN2 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Human chorionic gonadotropin b-chain (HCG)
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa
Cross reactivity to: Luteinizing hormone (LH) <0,3%; Follicle stimulating hormone (FSH) <0.1%; Thyroid stimulating homone (TSH) <0.1%

Properties

MAB<HCG>M-INN2 IgG is a monoclonal antibody directed to human chorionic gonadotropin β-chain. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<HCG>M-INN22.

Specification

Appearance: White lyophilizate
Solubility: Clear, to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<HCG>M-INN22 IgG

lyophilizate

Qualified for **cobas**® platforms

Application

MAB<HCG>M-INN22 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Human chorionic gonadotropin β-chain (HCG)
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa
Cross reactivity to: Luteinizing hormone (LH) <5.0%; Follicle stimulating hormone (FSH) <0.2%; Thyroid stimulating hormone (TSH) <0.5%

Catalog number	Pack size
11 812 564 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as “MAK<HCG>M-INN22-IgG”. Unit of measure is “mg active ingredient”.

DRY ICE

For further processing only.

Properties

MAB<HCG>M-INN22 IgG is a monoclonal antibody directed to human chorionic gonadotropin β-chain. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAK<HCG>M-INN2.

Specification

Appearance: White lyophilizate
Solubility: Clear, to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<H-S-Amy>M-Tu66C7 IgG

lyophilizate

Catalog number	Pack size
11 543 601 103	custom fill

Will be supplied as "MAK<H-S-Amy>M-Tu66C7-IgG(BR)SQ". Unit of measure is "g active ingredient".

For further processing only.

For measurement of acute pancreatitis (pancreatic α-amylase) in human serum and urine selective blocking of salivary α-amylase isoenzyme is achieved in the presence of the pancreatic h-α-amylase.
Qualified for the **cobas**® platforms.

Application

The combination of MAB<H-S-Amy>Tu88E8 and MAB<H-S-Amy>Tu66C7 inhibits the human salivary α-amylase ≥97% while maintaining the activity of the pancreatic h-α-amylase.

Product description

Immunogen: Human salivary amylase
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa
Clone: Tu66C7
Cross reactivity to h-pancreas α-amylase: ≤1 U/gW

Properties

MAB<H-S-Amy>M-Tu66C7 IgG fraction is purified by chromatography and lyophilized from a solution containing protein (≥20 mg/mL), potassium-phosphate buffer and NaCl. No preservatives are added.

Specification

Appearance: White lyophilizate
Solubility: Clear colorless solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.7 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%

Function testing (synergetic effects at +37°C):
h salivary amylase + MAB : ≤3% amylase activity
h pancreas amylase + MAB <S-AMY>: ≥98% amylase activity
Stability: At -15 to -25°C within specification range for 24 months.
Avoid repeated freezing and thawing.

MAB<H-S-Amy>M-Tu88E8 IgG

lyophilizate

Catalog number	Pack size
11 543 598 103	custom fill

Will be supplied as "MAK<H-S-Amy>M-Tu88E8-IgG(BR)SQ". Unit of measure is "g active ingredient".

For further processing only.

For measurement of acute pancreatitis (pancreatic α-amylase) in human serum and urine selective blocking of salivary α-amylase isoenzyme is achieved in the presence of the pancreatic h-α-amylase.
Qualified for the **cobas**® platforms.

Application

The combination of MAB<H-S-Amy>Tu88E8 and MAB<H-S-Amy>Tu66C7 inhibits the human salivary α-amylase ≥97% while maintaining the activity of the pancreatic h-α-amylase.

Product description

Immunogen: Human salivary amylase
Spleen donor: Mouse Balb/c
Antibody class: IgG2a, kappa
Clone: Tu88E8
Cross reactivity to h-pancreas α-amylase: ≤1 U/gW

Properties

MAB<H-S-Amy>M-Tu88E8 IgG fraction is purified by chromatography and lyophilized from a solution containing protein (≥20 mg/mL), potassium-phosphate buffer and NaCl. No preservatives are added.

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.7 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
Function testing (synergetic effects at +37°C):
h salivary amylase + MAB : ≤3% amylase activity
h pancreas amylase + MAB : ≥98% amylase activity
Stability: At -15 to -25°C within specification range for 24 months.
Avoid repeated freezing and thawing.

MAB<IGE>M-323 IgG

lyophilizate

Catalog number	Pack size
11 543 393 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<IGE>M-323-IgG". Unit of measure is "g active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<IGE>M-323 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Human IgE
Spleen donor: Mouse Balb/c
Antibody class: IgG1, light chain kappa
Cross reactivity to: Human IgM, IgG and IgA: Not detectable

Properties

MAB<IGE>M-323 IgG is a monoclonal antibody directed to human IgE. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<IGE>M-7H8.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<IGE>M-7H8 IgG

lyophilizate

Catalog number	Pack size
11 988 204 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<IGE>M-7H8-IGG". Unit of measure is "g active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<IGE>M-7H8 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Human IgE
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa
Cross reactivity to: Human IgM, IgG and IgA not detectable

Properties

MAB<IGE>M-7H8 IgG is a monoclonal antibody directed to human IgE. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<IGE>M-323 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<INSULIN>M-BM1 IgG

lyophilizate

Catalog number	Pack size
12 208 725 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<INSULIN>M-BM1-IgG". Unit of measure is "mg active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<INSULIN>M-BM1 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Antibody class: IgG1, kappa

Properties

MAB<INSULIN>M-BM1 IgG is a monoclonal antibody to insulin. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<INSULIN>M-ST3 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 60 months. Avoid repeated freezing and thawing.

MAB<INSULIN>M-ST3 IgG

lyophilizate

Catalog number	Pack size
12 208 750 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<INSULIN>M-ST3-IgG". Unit of measure is "mg active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<INSULIN>M-ST3 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Antibody class: IgG1, kappa
Cross reactivity to: Human pro insulin 1.2%; porcine insulin (strong recognition, determined by radio immuno assay (RIA)); bovine insulin (weak recognition, determined by RIA)

Properties

MAB<INSULIN>M-ST3 IgG is a monoclonal antibody directed to insulin. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<INSULIN>M-BM1 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 60 months. Avoid repeated freezing and thawing.

MAB<LH>M-11412 IgG

lyophilizate

Catalog number	Pack size
11 547 925 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<LH>M-11412-IgG". Unit of measure is "g active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<LH>M-11412 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Luteinizing hormone (LH)
Antibody class: IgG1, kappa
Cross reactivity to: Human chorionic gonadotropin <0.1%

Properties

MAB<LH>M-11412 IgG is a monoclonal antibody directed to luteinizing hormone. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<LH>M-2.406 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 60 months. Avoid repeated freezing and thawing.

MAB<LH>M-2.406 IgG

lyophilizate

Qualified for **cobas**® platforms

Catalog number	Pack size
11 547 038 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<LH>M-2.406-IgG". Unit of measure is "g active ingredient".

For further processing only.

Application

MAB<LH>M-2.406 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Luteinizing hormone (LH)
Antibody class: IgG1, kappa
Cross reactivity to: Human chorionic gonadotropin (HCG) not detectable; Follicle stimulating hormone (FSH) <0.3%; Thyroid stimulating hormone (TSH) <0.3%

Properties

MAB<LH>M-2.406-IgG is a monoclonal antibody directed to luteinizing hormone. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<LH>M-11412 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification

Stability: At -15 to -25°C within specification range for 60 months.
Avoid repeated freezing and thawing.

MAB<TSH>M-A8 IgG

lyophilizate

Catalog number	Pack size
11 367 978 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<TSH>M-A8-IGG(BR)". Unit of measure is "mg active ingredient".

For further processing only.

Application

MAB<TSH>M-A8 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Human thyroid stimulating hormone
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa
Cross reactivity to: Luteinizing hormone (LH) <0.1%; Follicle stimulating hormone (FSH) <0.1%

Properties

MAB<TSH>M-A8 IgG is a monoclonal antibody directed to thyroid stimulating homone. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<TSH>M-TU1.20 IgG.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months.
Avoid repeated freezing and thawing.

MAB<TSH>M-TU1.20 IgG

lyophilizate

Catalog number	Pack size
10 767 778 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAK<TSH>M-TU1.20-IGG(DE),LYO.". Unit of measure is "mg active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<TSH>M-Tu1.20 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description
Immunogen: Human thyroid stimulating hormone
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa
Cross reactivity to: Luteinizing hormone (LH) <0.2%; Follicle stimulating hormone (FSH) <3.0%.

Properties
MAB<TSH>M-Tu1.20 IgG is a monoclonal antibody directed to thyroid stimulating hormone. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<TSH>M-A8 IgG.

Specification
Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.6 mg/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<Dig>M-19-11 IgG
powder

Catalog number	Pack size
05 910 714 103	5 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAB<Dig>M-19-11-IgG *SQ". Unit of measure is "mg active ingredient".

For further processing only.

Qualified for **cobas**® platforms

Application
MAB<Dig>M-19-11 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description
Immunogen: Digoxin coupled to carrier
Spleen donor: Mouse, Balb/c
Antibody class: IgG1, kappa

Properties
MAB<Dig>M-19-11 IgG is a monoclonal antibody directed to Digoxigenin. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<TSH>M-A8 IgG.

Specification

Appearance: White powder
Protein (OD_{280}): ±20% (based on manufacturer's data)
Aggregates (HPLC; TSK 3000): ≤10%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 36 months.

MAB<C-Peptid>M-RPEP001 IgG

frozen solution

Qualified for **cobas**® platforms

Application

MAB<C-Peptid>M-RPEP001 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Human C-Peptide
Spleen donor: Mouse, Balb/c

Properties

MAB<C-Peptid>M-RPEP001 IgG is a monoclonal antibody directed to human C-Peptid. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<C-Peptid>M-RCPT3F11 IgG.

Specification

Appearance: Clear, colorless solution
Storage buffer: 0.01mol/L phosphate buffer, 0.15 mol/L NaCl, pH 7.2
Protein (OD_{280}): 3.0–6.0 mg/mL
Purity (HPLC / TSK 3000): ≥90 area%
pH-5.5 treatment (30 minutes): Corresponds to specification
Stability: At -60 to -90°C within specification range for 24 months. Avoid repeated freezing and thawing.

Catalog number	Pack size
03 732 584 103	5 mg, 10 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAB<C-Peptid>M-RPEP001-IgG". Unit of measure is "mg active ingredient".

DRY ICE

For further processing only.

MAB<C-Peptid>M-RCPT3F11 IgG

frozen solution

Qualified for **cobas**® platforms

Application

MAB<C-Peptid>M-RCPT3F11 IgG is qualified for heterogeneous immunoassays (HetIAs).

Catalog number	Pack size
03 732 606 103	5 mg, 10 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAB<C-Peptid>M-RCPT3F11-IgG". Unit of measure is "mg active ingredient".

DRY ICE

For further processing only.

Product description
Immunogen: Human C-Peptide
Spleen donor: Mouse, Balb/c

Properties
MAB<C-Peptid>M-RCPT3F11 IgG is a monoclonal antibody directed to human C-Peptid. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added. Sandwich partner for MAB<C-Peptid>M-RPEP001 IgG.

Specification
Appearance: Clear, colorless solution
Storage buffer: 0.01mol/L phosphate buffer, 0.15 mol/L NaCl, pH 7.2
Protein (OD_{280}): 3.0-6.0 mg/mL
Purity (HPLC / TSK 3000): ≥90 area%
pH-5.5 treatment (30 minutes): Corresponds to specification
Stability: At -60 to -90°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<HCT>M-11.3.59 IgG
solution

Catalog number	Pack size
06 548 776 103	5 mg, 10 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAB<HCT>M-11.3.59-IgG". Unit of measure is "mg active ingredient".

DRY ICE

For further processing only.

Qualified for **cobas**® platforms

Application
MAB<HCT>M-11.3.59 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description
Immunogen: Peptide derived from human calcitonin, coupled to carrier protein
Spleen donor: Mouse, Balb/c

Properties
MAB<HCT>M-11.3.59 IgG is a monoclonal antibody directed to human Calcitonin. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. No preservatives are added.

Specification
Appearance: Clear, colorless solution
Storage buffer: 50 mM potassium phosphate, 0,15 M NaCl, pH 8,5
Protein (OD_{280}): ≥10 mg/mL
Purity (HPLC / TSK 3000): ≥90 area%
pH-5.5 treatment (30 minutes): Corresponds to specification
Stability: At -60 to -90°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<Digit>M-145A41 IgG

solution

Catalog number	Pack size
12 041 740 103	5 mg, 10 mg (samples), ≥50 mg (custom fill)

Will be supplied as "MAB<Digit>M-145A41-IgG". Unit of measure is "mg active ingredient".

DRY ICE

For further processing only.

Qualified for **cobas**® platforms

Application

MAB<Digit>M-145A41 IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Immunogen: Digitoxin, coupled to carrier protein
Spleen donor: Mouse, Balb/c
Antibody class: IgG1, kappa

Properties

MAB<Digit>M-145A41 IgG is a monoclonal antibody directed to Digitoxin. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride.
Related product: Alpha-Biotin-Epsilon-Dig-Lys hapten.

Specification

Appearance: Clear, yellowish solution
Storage buffer: potassium phosphate, 10 mM; NaCl, 70 mol/L; Tween, 0.2%; sodium azide, 0.09%; pH 7.5
Protein (OD_{280}): ≥10 mg/mL
Purity (HPLC / Mono Q): ≥90% of total protein
pH-5.5 treatment (30 minutes): Corresponds to specification
Stability: At -60 to -90°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB<Keratin>M-AE3 IgG

frozen solution

Catalog number	Pack size
03 808 513 103	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

Will be supplied as "MAB<Keratin>M-AE3-IgG". Unit of measure is "mg ingredient".

DRY ICE

For further processing only.

Application

Qualified for immunohistochemistry

Product description

Spleen donor: Mouse, Balb/c
Antibody class: IgG1, kappa

Properties

MAB<Keratin>M-AE3 IgG is a monoclonal antibody directed to human keratin AE3. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. Related product: MAB<Keratin>M-AE1 IgG.

Specification

Appearance: Clear to opaque solution
pH value: 7.4–7.6
Protein (OD_{280}): 9.0–11.0 mg/mL
HPLC, MONOQ: ≥90%
Function test (IC 50%, ≥0 µg/mL): Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months.

MAB<Keratin>M-AE1 IgG

frozen solution

Application

Qualified for immunohistochemistry

Product description

Spleen donor: Mouse, Balb/c
Antibody class: IgG1, kappa

Properties

MAB<Keratin>M-AE1 IgG is a monoclonal antibody directed to human Keratin AE1. It is lyophilized from a solution containing protein, potassium phosphate buffer and sodium chloride. Related product: MAB<Keratin>M-AE3 IgG.

Specification

Appearance: Clear io opaque solution
pH value: 7.4–7.6
Protein (OD_{280}): 9.0–11.0 mg/mL
HPLC, MONOQ: ≥90%
Function test (IC 50%, ≥0 µg/mL): Corresponds to specification
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months.

Catalog number	Pack size
03 808 521 103	1 mg, 5 mg, 10 mg, 50 mg, 100 mg

Will be supplied as “MAB<Keratin>M-AE1-IgG”. Unit of measure is “mg ingredient”.

DRY ICE

For further processing only.

PAB<E2>K IgG

frozen solution

Catalog number	Pack size
05 344 255 103	10 mg (samples), ≥50 mg (custom fill)

Will be supplied as "PAK<E2>K-IgG(DE)". Unit of measure is "mg active ingredient".

DRY ICE

For further processing only.

Qualified for **cobas**® platforms

Application

PAB<E2>K IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

Spleen donor: Mouse, Balb/c
Antibody class: IgG1, kappa

Properties

PAB<E2>K IgG is a polyclonal antibody directed to estradiol produced in rabbits. No preservative added.

Specification

Appearance: Frozen solution
Appearance of solution: Clear to sligtly opalescent, colorless
Storage buffer: Potassium phosphate buffer, pH 8
Protein (OD_{280}): ≥30.0 mg/mL
Purity (HPLC / TSK3000): ≥90% of total protein
Country of origin: Germany
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -60 to -90°C within specification range for 24 months. Avoid multiple freeze/thaw cycles.

PAB<CRP>S IgG

frozen solution

Catalog number	Pack size
11 888 714 103	0.010 L, 0.100 L, 0.5 L, 1 L

Will be supplied as "PAK<CRP>S-IgG *SQ". Unit of measure is "L".

DRY ICE

For further processing only.

For measurement of c-reactive protein (CRP).

Application

Use PAB<CRP>S IgG for turbidimetric / nephelometric assays. It can be coupled to latex surfaces and used in the respective assays.

Product description

Immunogen: Human C-reactive protein
Related product: MAB<Digit>M-145A41 IgG

Properties

The polyclonal antibody IgG directed to c-reactive protein is produced in sheep. It is prepared as solution containing protein (≥40 g/L); Tris buffer with NaN_3, 0.09% (w/v).
Recommended working concentration: 15 mg/mL

Remark: When stored over longer periods at +4°C, a slight turbidity may occur which can easily be removed by centrifugation. No alteration of antibody properties occurs thereby.

Specification

Appearance: Clear to slightly opalescent yellowish solution
pH value (+25°C): 7.8–8.2
Protein (Biuret): 50–60 mg/mL
Function: Calibration curve characterization defined by turbidimetric measurement A_{340}/A_{700}
δA (Standard 1mg/dL): ≥0.038
δA (Standard 10mg/dL): ≥0.228
δA (Standard 25mg/dL): ≥0.370
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

Background information

C-reactive protein (CRP) is part of the β-globulin family found in human plasma. Increased levels of CRP are involved in a variety of inflammatory diseases. Furthermore elevated CRP serum levels indicate tissue injury, transplant rejection, carcinogenesis and acute myocardial infarction.

PAB<T3>S IgG

lyophilizate

Qualified for **cobas**® platforms

Catalog number	Pack size
10 907 332 103	10 mg (samples), ≥50 mg (custom fill)

Will be supplied as "PAK<T3>S-IGG(DE), (ES 3G)". Unit of measure is "g active ingredient".

For further processing only.

Application

PAB<T3>S IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

PAB<T3>S IgG is a polyclonal antibody directed to trijodothyronine produced in sheep.
Immunogen: Trijodothyronine derivative

Specification

Appearance: White lyophilizate
Protein (OD_{280}): ≥0.7 mg/mg lyophilizate
HPLC (HPLC / TSK 3000): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months.

PAB<T4>S IgG

lyophilizate

Qualified for **cobas**® platforms

Catalog number	Pack size
10 767 794 103	10 mg (samples), ≥50 mg (custom fill)

Will be supplied as "PAK<T4>S-IGG(DE),(ES)". Unit of measure is "mg active ingredient".

For further processing only.

Application

PAB<T4>S IgG is qualified for heterogeneous immunoassays (HetIAs).

Product description

PAB<T4>S IgG is a polyclonal antibody directed to trijodothyronine produced in sheep.
Immunogen: Trijodothyronine derivative

Specification

Appearance: White lyophilizate
Protein (OD_{280}): ≥0.7 mg/mg lyophilizate
HPLC (HPLC /TSK 3000): ≥90 area%
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months.

Alpha-Biotin-Epsilon-Dig-Lys

powder

Catalog number	Pack size
11 831 658 103	0.5 mg, custom fill

Will be supplied as “alpha-Biotin-epsilon-Dig-Lys”. Unit of measure is “mg ingredient”.

DRY ICE

For further processing only.

Application

Alpha-Biotin-Epsilon-Dig-Lys is qualified for heterogenous immunoassays (HetIAs).

Properties

Related product: MAB<Digit>M-145A41 IgG

Specification

Appearance: Colorless powder
Purity (HPLC): ≥95 area%
Stability: At -60 to -90°C within specification range for 12 months.

CA 15-3 Ag

liquid

Catalog number	Pack size
07 190 999 001	custom fill

Will be supplied as “CA 15-3 Ag”. Unit of measure is “kU”.

For further processing only.

Application

For development and manufacturing of target-specific assay reagents.

Properties

Highly purified native breast cancer (CA 15-3) antigen derived from human fluids.

Specification

Identification (ELISA Calbiotech): Positive
CA 15-3 content (Roche Elecsys®): >10 kU/mL
Purity Ratio (Roche Elecsys®): Activity/ml/OD280 nm
Co product 19-9: <25%
Co product 125: <25%
Co product AFP: <25%
Co product 72-4: <25%
Co Product Ferritin: <25%
Co product CEA: <25%
Bioburden: <10 CFU/mL
Viral Marker Test (ELISA) for HBsAg, Anti-HCV and Anti-HIV I + II (US-FDA approved BioRad & Ortho Clinical Diagnostics): Negative
Absence of viral DNA/RNA (HBV, HIV I and HCV; PCR): Negative
Stability: At +2 to +8°C within specification range for 10 months.

Quality

Extensively tested for absence of HBsAg, Anti-HCV and Anti-HIV I + II (ELISA), and for viral DNA/RNA (PCR: HBV, HIV I and HCV) by applying FDA-approved methods.

Background information
Liquid (aseptically filtered) in 50 mM PBS (pH 7.2 -7.6) and 0.09% w/v sodium azide

CA 19-9 Ag
liquid

Catalog number	Pack size
07 191 006 001	custom fill

Will be supplied as “CA 19-9 Ag”. Unit of measure is “kU”.

For further processing only.

Application
For development and manufacturing of target-specific assay reagents.

Properties
Highly purified native ovarian cancer (CA 125) antigen derived from human fluids.

Specification
Identification (ELISA Calbiotech): Positive
CA 19-9 content (Roche Elecsys®): >10 kU/mL
Purity Ratio (Roche Elecsys®): Activity/ml/OD280 nm
Co product 15-3: <25%
Co product 125: <25%
Co product AFP: <25%
Co product 72-4: <25%
Co Product Ferritin: <25%
Co product CEA: <25%
Bioburden: <10 CFU/mL
Viral Marker Test (ELISA) for HBsAg, Anti-HCV and Anti-HIV I + II (US-FDA approved BioRad & Ortho Clinical Diagnostics): Negative
Absence of viral DNA/RNA for (HBV, HIV I and HCV) (PCR): Negative
Stability: At +2 to +8°C within specification range for 10 months.

Quality
Extensively tested for absence of HBsAg, Anti-HCV and Anti-HIV I + II (ELISA), and for viral DNA/RNA (PCR: HBV, HIV I and HCV) by applying FDA-approved methods.

Background information
Liquid (aseptically filtered) in 50 mM PBS (pH 7.2 -7.6) and 0.09% w/v sodium azide

CA 72-4 Ag

liquid

Catalog number	Pack size
07 191 014 001	custom fill

Will be supplied as “CA 72-4 Ag”. Unit of measure is “kU”.

For further processing only.

Application

For development and manufacturing of target-specific assay reagents.

Properties

Highly purified native gastric cancer (CA 72-4) antigen derived from human fluids.

Specification

Identification (ELISA): Positive
CA 72-4content (Roche Elecsys®): >10 kU/mL
Purity Ratio (Roche Elecsys®): Activity/ml/OD280 nm
Co product 15-3: <25%
Co product 125: <25%
Co product AFP: <25%
Co product 19-9: <25%
Co Product Ferritin: <25%
Co product CEA: <25%
Bioburden: <10 CFU/mL
Viral Marker Test (ELISA) for HBsAg, Anti-HCV and Anti-HIV I + II (US-FDA approved BioRad & Ortho Clinical Diagnostics): Negative
Absence of viral DNA/RNA for (HBV, HIV I and HCV; PCR): Negative
Stability: At +2 to +8°C within specification range for 10 months.

Quality

Extensively tested for absence of HBsAg, Anti-HCV and Anti-HIV I + II (ELISA), and for viral DNA/RNA (PCR: HBV, HIV I and HCV) by applying FDA-approved methods.

Background information

Liquid in salt buffer (50 mM phosphate, 0.15 M NaCl; pH 7.2-7.6), preservative 0.09% w/v sodium azide and 0.2% Proclin 300.

CA 125 Ag

liquid

Catalog number	Pack size
07 190 930 001	custom fill

Will be supplied as “CA 125 Ag”. Unit of measure is “kU”.

For further processing only.

Application

For development and manufacturing of target-specific assay reagents.

Properties

Highly purified native carcinoembryonic (CEA) antigen derived from cancer fluids.

Specification
Identification (ELISA Calbiotech): Positive
CA 125 content (Roche Elecsys®): >10 kU/mL
Purity Ratio (Roche Elecsys®): Activity/mL/OD280 nm
Co product 19-9: <25%
Co product 15-3: <25%
Co product AFP: <25%
Co product 72-4: <25%
Co Product Ferritin: <25%
Co product CEA: <25%
Bioburden: <10 CFU/mL
Viral Marker Test (ELISA) for HBsAg, Anti-HCV and Anti-HIV I + II (US-FDA approved BioRad & Ortho Clinical Diagnostics): Negative
Absence of viral DNA/RNA (HBV, HIV I and HCV; PCR): Negative
Stability: At +2 to +8°C within specification range for 10 months.

Quality
Extensively tested for absence of HBsAg, Anti-HCV and Anti-HIV I + II (ELISA), and for viral DNA/RNA (PCR: HBV, HIV I and HCV) by applying FDA-approved methods.

Background information
Liquid (aseptically filtered) in 50 mM phosphate, 0.15 M NaCl (pH 7.2-7.6) and 0.09% w/v sodium azide

CEA Ag
liquid

Catalog number	Pack size
07 190 948 001	custom fill

Will be supplied as “CEA Ag”. Unit of measure is “mg”.

For further processing only.

Application
For development and manufacturing of target-specific assay reagents.

Product description
Antigen derived from cancer fluids.

Properties
Highly purified native carcinoembryonic (CEA) antigen derived from cancer fluids.
Related products: MAB<CEA>M-TU3 IgG, MAB<CEA>M-TU2 IgG

Specification
Identification (ELISA): Positive
CEA content (Roche **cobas**® e411): 1-2 mg/mL
Purity (SDS PAGE): >98%
Purity profile (SDS PAGE): Single band at 180 kD
Bioburden: <10 CFU/mL

Viral Marker Test (ELISA) for HBsAg, Anti-HCV and Anti-HIV I + II (US-FDA approved BioRad & Ortho Clinical Diagnostics): Negative
Absence of viral DNA/RNA for (HBV, HIV I and HCV; PCR): Negative
Stability: At +2 to +8°C within specification range for 10 months.

Quality
Extensively tested for absence of HBsAg, Anti-HCV and Anti-HIV I + II (ELISA), and for viral DNA/RNA (PCR: HBV, HIV I and HCV) by applying FDA-approved methods.

Background information
Liquid (aseptically filtered) 50 mM sodium citrate and 150 mM NaCl (pH 7.2-7.6) containing 20% glycerol and 0.09% w/v sodium azide

AFP Ag
liquid

Catalog number	Pack size
07 190 905 001	custom fill

Will be supplied as “AFP Ag”. Unit of measure is “mg”.

For further processing only.

Application
For development and manufacturing of target-specific assay reagents.

Properties
Highly purified native α feto protein (AFP) antigen derived from human cord blood.
Related products: MAB<AFP>M-TU11 IgG, MAB<AFP>M-LJ738 IgG

Specification
Identification (ELISA): Positive
AFP content (Roche Elecsys®): 1-2 mg/mL
Total protein (OD_{280}): >AFP content
Purity (Activity/TP): ≥98%
Purity profile (SDS PAGE): Single band at 66 kD
Bioburden: <10 CFU/mL
Viral Marker Test (ELISA) for HBsAg, Anti-HCV and Anti-HIV I + II (US-FDA approved BioRad & Ortho Clinical Diagnostics): Negative
Absence of viral DNA/RNA for (HBV, HIV I and HCV; PCR): Negative
Stability: At +2 to +8°C within specification range for 10 months.

Quality
Extensively tested for absence of HBsAg, Anti-HCV and Anti-HIV I + II (ELISA), and for viral DNA/RNA (PCR: HBV, HIV I and HCV) by applying FDA-approved methods.

Background information
Liquid (aseptically filtered) in 50 mM Tris and 150 mM NaCl, (pH 7.2±0.2) containing 0.09% w/v sodium azide

PSA Ag
liquid

Catalog number	Pack size
07 190 956 001	custom fill

Will be supplied as “PSA Ag”. Unit of measure is “mg”.

For further processing only.

Application
For development and manufacturing of target-specific assay reagents.

Product description
Antigen derived from human seminal plasma

Properties
Highly purified native prostate specific (PSA) antigen derived from human seminal plasma.

Specification
Identification (ECLIA): Positive
PSA activity (ECLIA, Roche Elecsys®): >0.5 mg/ml
Purity (SDS PAGE): >96%, cluster of bands at 29 kD
Bioburden: <10 CFU/ml
Viral Marker Test (ELISA) for HBsAg, Anti-HCV and Anti-HIV I + II (US-FDA approved BioRad & Ortho Clinical Diagnostics): Negative
Absence of viral DNA/RNA for (HBV, HIV I and HCV; PCR): Negative
Stability: At +2 to +8°C within specification range for 10 months.

Quality
Extensively tested for absence of HBsAg, Anti-HCV and Anti-HIV I + II (ELISA), and for viral DNA/RNA (PCR: HBV, HIV I and HCV) by applying FDA-approved methods.

Background information
Liquid (aseptically filtered) in 0.1 M Tris acetate (pH 6 ±0.2) containing 20% glycerol and 0.09% w/v sodium azide

CRP Ag
liquid

Catalog number	Pack size
07 191 022 001	custom fill

Will be supplied as “CRP Ag”. Unit of measure is “mg”.

For further processing only.

Application
For development and manufacturing of target-specific assay reagents.

Properties
Highly purified native C reactive protein (CRP) antigen derived from human fluids.

Specification
Identification (Western Blot): Positive
CRP content (Turbilatex): 2-3 mg/mL (Spinreact)
Total protein (OD_{280}): >CRP content

Purity (CRP content/TP): ≥99%
Purity profile (SDS PAGE): Single band at 21 kD
Bioburden: <10 CFU/mL
Viral Marker Test (ELISA) for HBsAg, Anti-HCV and Anti-HIV I + II (US-FDA approved BioRad & Ortho Clinical Diagnostics): Negative
Absence of viral DNA/RNA for (HBV, HIV I and HCV; PCR): Negative
Stability: At +2 to +8°C within specification range for 10 months.

Quality
Extensively tested for absence of HBsAg, Anti-HCV and Anti-HIV I + II (ELISA), and for viral DNA/RNA (PCR: HBV, HIV I and HCV) by applying FDA-approved methods.

Background information
Liquid (aseptically filtered) in 20 mM Tris and 280 mM NaCl, 5 mM $CaCl_2$ (pH 7.9–8.1) containing 0.09%w/v sodium azide

B2M Ag
liquid

Catalog number	Pack size
07 191 073 001	custom fill

Will be supplied as "B2M Ag". Unit of measure is "mg".

For further processing only.

Application
For development and manufacturing of target-specific assay reagents.

Properties
Highly purified native B2M antigen derived from human urine.

Specification
Identification (Western Blot): Positive
B2M content (Turbilatex): 1-2 mg/mL (Spinreact)
Total protein (OD_{280}): As observed
Purity (B2M content/TP): >98%
Purity profile (SDS PAGE): Single band at 12 kD
Bioburden: <10 CFU/mL
Viral Marker Test (ELISA) for HBsAg, Anti-HCV and Anti-HIV I + II (US-FDA approved BioRad & Ortho Clinical Diagnostics): Negative
Absence of viral DNA/RNA for (HBV, HIV I and HCV; PCR): Negative
Stability: At +2 to+8°C within specification range for 10 months.

Quality
Extensively tested for absence of HBsAg, Anti-HCV and Anti-HIV I + II (ELISA), and for viral DNA/RNA (PCR: HBV, HIV I and HCV) by applying FDA-approved methods.

Background information
Liquid (aseptically filtered) 40 mM PBS, 0.15 M NaCl, 1 mM EDTA, sodium salt, (pH 7.2±0.2) containing 0.09% w/v sodium azide

HBsAg (ad)

liquid

Catalog number	Pack size
07 191 057 001	custom fill

Will be supplied as “HBsAg (ad)”. Unit of measure is “mg”.

For further processing only.

Application

For development and manufacturing of target-specific assay reagents.

Product description

Antigen derived from human blood.

Properties

Highly purified native hepatitis B surface -ad type (HBsAg) (ad) antigen derived from human blood.
Realated product: HBsAg (ay)

Specification

Identification (ELISA): Positive
HBsAg content (BioRad, against PEI standard): 2-4 mg/mL
Total protein ($OD_{280-320nm}$): 2-4 mg/mL
‘Ad’ subtype purity (ELISA) >99%
Purity profile (SDS PAGE): Corresponds to internal reference standard
Aggregation (gel filtration): <9%
Bioburden: <10 CFU/mL
Viral Marker Test (ELISA) for HBsAg, Anti-HCV and Anti-HIV I + II (US-FDA approved BioRad & Ortho Clinical Diagnostics): Negative
Absence of viral DNA/RNA for (HBV, HIV I and HCV; PCR): Negative
Stability: At +2 to +8°C within specification range for 10 months.

Quality

Extensively tested for absence of HBsAg, Anti-HCV and Anti-HIV I + II (ELISA), and for viral DNA/RNA (PCR: HBV, HIV I and HCV) by applying FDA-approved methods.

Background information

Liquid (aseptically filtered) in 50 mM phosphate, 150 mM NaCl (pH 7.2-7.6) containing 0.09% w/v sodium azide.
Heat inactivated at +60°C for 15 hours.

HBsAg (ay)

liquid

Catalog number	Pack size
07 191 065 001	custom fill

Will be supplied as "HBsAg (ay)". Unit of measure is "mg".

For further processing only.

Application

For development and manufacturing of target-specific assay reagents.

Properties

Highly purified native hepatitis B surface -ay type (HBsAg) (ay) antigen derived from human blood.
Realated product: HBsAg (ad)

Specification

Identification (ELISA): Positive
HBsAg content (BioRad, against PEI standard): 2-4 mg/mL
Total protein ($OD_{280\text{-}320nm}$): 2-4 mg/mL
'Ay' subtype*pur*ity (ELISA): >99%
Aggregation (gel filtration): <9%
Purity profile (SDS PAGE): Corresponds to internal reference standard
Bioburden: <10 CFU/mL
Viral Marker Test (ELISA) for HBsAg, Anti-HCV and Anti-HIV I + II (US-FDA approved BioRad & Ortho Clinical Diagnostics): Negative
Absence of viral DNA/RNA for (HBV, HIV I and HCV) (PCR): Negative
Stability: At +2 to +8°C within specification range for 10 months.

Quality

Extensively tested for absence of HBsAg, Anti-HCV and Anti-HIV I + II (ELISA), and for viral DNA/RNA (PCR: HBV, HIV I and HCV) by applying FDA-approved methods.

Background information

Liquid (aseptically filtered) in 50 mM phosphate, 150 mM NaCl (pH 7.2-7.6) containing 0.09% w/v sodium azide.
Heat inactivated at +60°C for 15 hours.

Streptavidin, recombinant

from *Streptomyces avidinii*, **expressed in** *E. coli*, **lyophilizate**

Catalog number	Pack size
11 520 679 103	custom fill

Will be supplied as "Streptavidin Special Quality". Unit of measure is "g active ingredient".

For further processing only.

Application

Use Streptavidin, recombinant as a tool for solid phase technology and universal detection systems in immunology and molecular diagnostics.

Specification

Appearance: White lyophilizate
Protein (A_{282}; factor 3.1): 0.6-0.8 mg/mg lyophilizate
Specific activity/Biotin binding capacity: ≥17 U/mg protein
Proteasen (incubation with Azocoll for up to 24 hours at +25°C): ≤0.001 U/mg lyophilizate
Absorption (A_{405}, against repurified water): ≤0.1
Water (K. Fischer): ≤12%
IEF (pH 6-9): Two main bands between 6.8 and 7.5
SDS-PAGE: Chromatographically homogeneous
Stability: At +2 to +8°C within specification range for 24 months.

Background information

Streptavidin consists of four subunits with a molecular weight of 13 kD, each containing a single biotin binding site. Each subunit has six thyrosine residues. The protein is carbohydrate free.
Streptavidin + 4 biotin -> streptavidin · $(biotin)_4$
The formation of the complex is measured at 233 nm.

Streptavidin-Mutein-Sepharose

suspension

Catalog number	Pack size
03 314 731 103	0.010 L (samples), 0.2 L (bulk)

Will be supplied as "SA-MUTEIN-SEPHAROSE". Unit of measure is "L".

For further processing only.

Sepharose-Mutein-Sepharose provides a recombinant streptavidin mutein with reduced binding affinity to biotin, immobilized onto cross-linked agarose beads in a highly stable form.

Application

Streptavidin-Mutein-Sepharose allows purification of biotinylated antibodies and other proteins, resulting in excellent purity and recovery.

Properties

Gel suspension (50%), ready to use, bulk format.

Specification

Appearance: White suspension
Binding capacity of Fab-Bi: ≥4.5 mg/mL
Shipping category: Cool packs
Stability: At+2 to +8°C within specification range 36 months.

Streptavidin POD

frozen solution

Application

Universal reagent for the detection of biotinylated compounds.

Specification

Appearance: Clear, brownish solution
POD activity (+25°C, ABTS, pH 5.0): 2,000-8,000 U/mL
Performance test (recovery Streptavidin POD): Corresponds to reference
Stability: At -60 to -90°C within specification range for 24 months.

Catalog number	Pack size
11 096 346 103	custom fill

Will be supplied as “Streptavidin-POD Conjugate”. Unit of measure is “kU”.

DRY ICE

For further processing only.

D-Biotin-N-hydroxysuccinimide ester

crystalline powder

Catalog number	Pack size
10 734 250 103	custom fill

Will be supplied as ''D-Biotin-N-hydroxy- succinimide Ester''. Unit of measure is ''g''.

For further processing only.

Application

Use D-Biotin-N-hydroxysuccinimide ester as biotinylating reagent for proteins and amino labeled oligonucleotides.

CAS: 35013-72-0

Properties

Nomenclature: D-Biotinyl-N-hydroxy-succinimide ester
Formula: $C_{14}H_{19}N_3O_5S$
Molecular weight: 341.4 D
Remark: Under mild conditions the activated ester reacts with amino groups. The aminocaproic acid spacer is useful if biotinylated macromolecules are coupled because steric hindrance is minimized. Gel suspension (50%), ready to use, bulk format.

Specification

Appearance: White crystallizate
Biotin ester (from N): 98-103%
N (elementary analysis): 12.0-12.73%
Purity (TLC: silica gel, 1-butanol/glacial acetic acid/H_2O= 2/1/1; a) in UV; b) with 4-Dimethylamino cinnamaldehyde): Chromatographically homogeneous
Stability: At +2 to +8°C within specification range for 24 months.

D-Biotinoyl-ε-aminocaproic acid-N-hydroxysuccinimide ester

powder

Catalog number	Pack size
11 003 933 103	custom fill

Will be supplied as ''D-Biotinyl-ε-aminocap. Acid-N-Hydroxy Succ.''. Unit of measure is ''g''.

DRY ICE

For further processing only.

Application

Use D-Biotinoyl-ε-aminocaproic acid-N-hydroxysuccinimide ester as biotinylating reagent for proteins and amino labeled oligonucleotides.

CAS: 72040-63-2

Properties

Nomenclature: D-Biotinyl-ε-amido caproic acid N-hydroxysuccinimid ester
Formula: $C_{20}H_{30}N_4O_6S$
Molecular weight: 454.5 D
Remark: Under mild conditions the activated ester reacts with amino groups. The aminocaproic acid spacer is useful if biotinylated macromolecules are coupled because steric hindrance is minimized.

Specification

Appearance: White to beige powder
Biotin ester (from N): ≥97–103%
N (elementary analysis): 11.9–12.8%
C (elementary analysis): 51.0–54.7%
H (elementary analysis): 6.4–6.9%
Purity (TLC: silica gel, 1-butanol/glacial acetic acid/H_2O= 50/15/25, iodide stream/UV): Chromatographically homogeneous
Hydrolysis product (NMR): ≤20%
Stability: At -15 to -25°C within specification range for 24 months.

Streptavidin R-Phycoerythrin LumiGrade Reagent

solution

Catalog number	Pack size
05 065 925 103	1 mL, 5 mL, 100 mL, custom fill

Will be supplied as "Streptavidin R-Phycoerythrin Lumi Grade Reagent". Unit of measure is "mg active ingredient".

For further processing only.

Standard for highly sensitive fluorescent detection.

Application

Conjugated reporter dyes such as Streptavidin R-Phycoerythrin (SA-PE) are well established for Luminex's xMAP Assay Kits or array-based applications due to their excellent spectral characteristics. Their dedicated and reproducible design ensure high performance multiplex assays using antibodies, receptors, peptides and oligonucleotides.

Product description

The Streptavidin R-Phycoerythrin LumiGrade conjugate contains Phycoerythrin from red algae (RPE) and Streptavidin (SA), recombinant.

Properties

High molecular weight conjugate size distribution (700-1200 kD).

Specification

Appearance: Reddish solution
Streptavidin (A_{280}): 16-21 weight%
Absorption ratio $A_{566/280}$: >3.3
Protein: 1.00 ± 0.10 mg/ml
Content of color relating to SA: 0.95-1.40 (molar ratio RPE : SA)
Purity (HPLC/ TSK 3000 XL): free SA <1%
Fluorescence emission: Maximum / intensity
488 nm excitation: 576 nm ± 5 / ≥200
545 nm excitation : 576 nm ± 5 / ≥250
Stability: At +2 to +8°C within specification range for 36 months.

Streptavidin R-Phycoerythrin LumiGrade Ultrasensitive Reagent

solution

Catalog number	Pack size
05 351 693 103	1 mL, 100 mL, custom fill

Will be supplied as "Streptavidin R-Phycoerythrin Lumi Grade ultrasensitive". Unit of measure is "mg active ingredient".

For further processing only.

Standard for ultrasensitive fluorescent detection.

Application

Conjugated reporter dyes such as Streptavidin R-Phycoerythrin (SA-PE) are well established for Luminex's xMAP® Assay Kits and array-based applications due to their excellent spectral characteristics. Their dedicated and reproducible design ensure high performance multiplex assays using antibodies, receptors, peptides and oligonucleotides.

Product description

The Streptavidin R-Phycoerythrin LumiGrade conjugate contains Phycoerythrin (PE) from red algae and Streptavidin (SA), recombinant.

Properties

High molecular weight conjugate size distribution (1500-50000 kD).

Specification

Appearance: Reddish solution
A_{566}: 0.73-0.81
SA-R-PE from R-Phycoerythrin (A_{566}/7.7): 0.95-1.05 mg/mL
Purity (HPLC / TSK 6000): ≥ 99.7 area%
Contamination (HPLC / TSK 6000): ≤ 0.3 area%
Stability: At +2 to +8°C within specification range for 24 months.

Multi Analyte Stripe

universal device

Catalog number	Pack size
05 354 358 103	50 stripes in 1 box

Will be supplied as “Multi Analyte Stripe”. Unit of measure is “piece”.
Minimum order size: 85 000 single strips.

For further processing only.

Universal test stripe

Application

Use the Multi Analyte Stripes for a range of applications, such as classical sandwich immunoassays to NA/Oligo-detection.

Product description

Test stripes are delivered in boxes, each containing 50 stripes.

Specification

Components of the test stripe (4.6 nm):
MAB<Dig>IgG on gold conjugate: 0.2 µg per test stripe
Poly-Streptavidin (result line): 0.8 µg per test stripe
PAB<MouseFc>IgG (control line): 0.1 µg per test stripe
Sensitivity (analytical):
A biotin/-digoxigenin-peptide in 700 µL buffer solution at a concentration of 50 pg/mL is visually detected as positive on the basis of the result line in the read out zone after chromatography.
Specificity (analytical):
The test stripes don’t show a visible result line after chromatography of 700 µL buffer without adding biotin/-digoxigenin-peptide (negative control).
Stability: At +2 to +8°C from date of manufacturing for 18 months.
Remark: The Multi Analyte Stripe is an immunoassay test stripe employing anti-biotin/anti-digoxigenin.

Streptavidin Magnetic Particles

suspension

Catalog number	Pack size
11 636 502 103	custom fill

Will be supplied as “Streptavidin Magnetic-Particles”. Unit of measure is “g active ingredient”.

For further processing only.

Streptavidin-coated magnetic particles

Application

Use Streptavidin Magnetbeads for the fast and simple separation of a variety of biotin-labeled molecules in solution. This includes single mRNA, oligonucleotides, DNA, DNA fragments, glycoconjugates and protein isolation. Streptavidin Magnetbeads can also be used as a solid phase within liquid ELISA systems.

Properties

The beads are offered in a protease- and DNase/RNase-free format.

Specification

Appearance: Brown suspension
Content: 9-11 mg/mL (solid binding)
Performance test in mRNA-HS-kit: Funtion corresponds
Specific activity/Biotin binding capacity: ≥1700 pmol/mg
Performance test (in mRNA-HS-Kit): Function corresponds
Proteases (incubation for up to 30 minutes at +37°C, casein-resorufin-marked): Not detectable
RNases (incubation for up to 4 hours at +37°C): Not detectable
DNases (incubation for up to 4 hours at +37°C): Not detectable
Unspecific binding of protein: Not detectable
Stability: At +2 to +8°C within specification range for 24 months.

StreptaWell, 384/C1

transparent, coated with recombinant streptavidin

Catalog number	Pack size
11 974 998 103	1 plate

Will be supplied as "TRSA-SA MTP 384-well, clear". Unit of measure is "piece".

For further processing only.

Application

Use Streptavidin-coated microplates in all kinds of immunoassays as well as in assay systems for detecting protein-nucleic acid interactions and nucleic assay amplification and hybridization. Various types of transparent and white streptavidin-coated plates (96- and 384-well) are available for colorimetric, chemiluminescent and fluorescent applications. The minimum order size is 500 plates/order with a delivery time of 8 –10 weeks.

Specification

Type of coating / number of cups: C1 / 384
Type of plate (384 NUNC): Corresponds to specification
Color (transparent): Corresponds to specification
Biotin binding capacity: ≥1.5 ng/well
Homogeneity [VK] of plate: ≤8%
Homogeneity [VK] of series: ≤15%
Leaching: <5 ngSA/well
Loading volume: ≥90 µL/well
NBL volume: >90 µL/well
Stability: At +2 to +8°C within specification range for 36 months.

StreptaWell, N-breakapart C8/C1

transparent, coated with recombinant streptavidin

Catalog number	Pack size
03 246 507 103	1 plate

Will be supplied as “SA-MTP (N-breakap. transp./C1)”. Unit of measure is “piece”.

For further processing only.

Application

Use Streptavidin-coated microplates in all kinds of immunoassays as well as in assay systems for detecting protein-nucleic acid interactions and nucleic assay amplification and hybridization. Various types of transparent and white streptavidin-coated plates (96- and 384-well) are available for colorimetric, chemiluminescent and fluorescent applications. The minimum order size is 500 plates/order with a delivery time of 8 –10 weeks.

Specification

Kind of coating/ number of cups (C1 / 96): Corresponds to specification
Plate type: C8 / breakapart
Color: Transparent
Biotin binding capacity: >5 ng/well
Homogeneity [VK] of plate: <5%
Homogeneity [VK] of series: <10%
Leaching: <5 ngSA/well
Loading volume: ≥250 µL/well
NBL volume: >250 µL/well
Stability: At +2 to +8°C within specification range for 36 months.

StreptaWell, N-breakapart C8/C2 plus, high binding capacity

transparent, coated with recombinant streptavidin

Catalog number	Pack size
11 986 694 103	1 plate

Will be supplied as “SA-MTP (N-breakap.C8/C2 plus)”. Unit of measure is “piece”.

For further processing only.

Application

Use Streptavidin-coated microplates in all kinds of immunoassays as well as in assay systems for detecting protein-nucleic acid interactions and nucleic assay amplification and hybridization. Various types of transparent and white streptavidin-coated plates (96- and 384-well) are available for colorimetric, chemiluminescent and fluorescent applications. The minimum order size is 500 plates/order with a delivery time of 8–10 weeks.

Specification

Kind of coating/ number of cups (C2 / 96): Corresponds to specification
Plate type (C8 / breakapart): Corresponds to specification
Color: Transparent
Biotin binding capacity: ≥20 ng/well
Homogeneity [VK] of plate: ≤5%
Homogeneity [VK] of series: ≤10%

Leaching: <5 ngSA/well
Loading volume: ≥250 µL/well
NBL volume: >250 µL/well
Stability: At +2 to +8°C within specification range for 36 months.

StreptaWell, F8/C1 module

transparent, coated with recombinant streptavidin

Catalog number	Pack size
11 940 279 103	1 plate

Will be supplied as "SA coated MTP Nunc F8". Unit of measure is "piece".

For further processing only.

Application

Use Streptavidin-coated microplates in all kinds of immunoassays as well as in assay systems for detecting protein-nucleic acid interactions and nucleic assay amplification and hybridization. Various types of transparent and white streptavidin-coated plates (96- and 384-well) are available for colorimetric, chemiluminescent and fluorescent applications. The minimum order size is 500 plates/order with a delivery time of 8 –10 weeks.

Specification

Kind of coating/ number of cups (C1 / 96): Corresponds to specification
Plate type (F8): Corresponds to specification
Color: Transparent
Biotin binding capacity: ≥5 ng/well
Homogeneity [VK] of plate: <5%
Homogeneity [VK] of series: <10%
Leaching: <2 ngSA/well
Loading volume: ≥300 µL/well
NBL volume: >300 µL/well
Stability: At +2 to +8°C within specification range for 36 months.

StreptaWell, F8/C2 plus, high binding capacity

transparent, coated with recombinant streptavidin

Catalog number	Pack size
11 965 875 103	1 plate

Will be supplied as "SA-MTP (Nunc F8 transp./C2+)". Unit of measure is "piece".

For further processing only.

Application

Use Streptavidin-coated microplates in all kinds of immunoassays as well as in assay systems for detecting protein-nucleic acid interactions and nucleic assay amplification and hybridization. Various types of transparent and white streptavidin-coated plates (96- and 384-well) are available for colorimetric, chemiluminescent and fluorescent applications. The minimum order size is 500 plates/order with a delivery time of 8–10 weeks.

Specification

Kind of coating/ number of cups (C2 / 96): Corresponds to specification
Plate type (F8): Corresponds to specification
Color: Transparent
Biotin binding capacity: ≥25 ng/well
Homogeneity [VK] of plate: ≤5%
Homogeneity [VK] of series: ≤10%
Leaching: <5 ngSA/well
Loading volume: ≥300 µL/well
NBL volume: >300 µL/well
Stability: At +2 to +8°C within specification range for 36 months.

Colloidal Gold 20 nm

suspension

Catalog number	Pack size
05 418 291 103	1 L, 5 L, 25 L

Will be supplied as “Colloidal Gold 20 nm”. Unit of measure is “L”.

For further processing only.

Colloidal Gold is well known as an established labeling tool for a broad range of blotting and diagnostic applications and for electron- /light microscopy.

Application

Use Colloidal Gold, 20 nm as conjugation partner for all kind of antibodies, proteins and macromolecules. It is recommended for low to medium sensitive assays.

Product description

The 20 nm Goldsol quality is red and spherical. The ready to use “gold suspension” is pH adjusted.

Properties

‘’Citrate Gold’’ obtained from reduction of Tetrachloro-auric acid ($HAuCl_4$) with citric acid.

Specification

Appearance: Clear, light red liquid
Particle size: 19-23 nm
Particle concentration (A_{520} unit): 0.85-1.00
λ_{max}: 516.0-518.5 nm
Stability: At +2 to +8°C within specification range for 12 months.

Background information

Due to it’s intense red color Colloidal Gold is one of the basic components for test strip development and manufacturing.

Colloidal Gold 40 nm

suspension

Catalog number	Pack size
05 416 744 103	1 L, 5 L, 25 L

Will be supplied as “Colloidal Gold 40 nm”. Unit of measure is “L”.

For further processing only.

Colloidal Gold is well known as an established labeling tool for a broad range of blotting and diagnostic applications and for electron- /light microscopy.

Application

Use Colloidal Gold, 40 nm as conjugation partner for all kind of antibodies, proteins and macromolecules. It is recommended for high sensitive assays due to its unique shape and color.

Product description

The 40 nm Goldsol quality is red/violet (“potato shape”). The ready to use “gold suspension” is pH adjusted.

Properties

''Citrate Gold'' obtained from reduction of Tetrachloro-auric acid ($HAuCl_4$) with citric acid.

Specification

Appearance: Turbid, slightly opalescent raspberry red liquid
Particle size: 38.0-43.0 nm
Particle concentration (A_{520} unit): 1±0.2
λ_{max}: 531±1 nm
Stability: At +2 to +8°C within specification range for 12 months.

Background information

Due to it's intense red/violet color Colloidal Gold is one of the basic components for test strip development and manufacturing.

Framework IEP

lyophilizate

Catalog number	Pack size
03 369 846 103	custom fill

Will be supplied as “Framework IEP *SQ”. Unit of measure is “mg active ingredient”.

For further processing only.

Application

The monoclonal Framework IEP eliminates monomeric (“immuno-response”) and highly specific interferences against the framework regions of the antibodies. Its interference eliminating strength is based on identical immuno-reactive conformational epitopes in the framework region of the test antibody.

Product description

Immunogen: PTH
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa
Preparation: Framework IEP is lyophilized from a solution containing protein, potassium phosphate and NaCl. No further preservatives are added.

Properties

Molecular structure: IgG1, monomer
Remark: Cannot be used in test systems for determination of PTH.
Serum concentrations of CK-MM: ≤3 U/mL have shown neither influence on interference elimination properties nor on recovery of analyte.

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Purity (HPLC): ≥90% IgG of total protein
Functional activity (relative titer based on masterlot): ≥80%
Recommended working concentration: 20-5,000 µg/ml incubation buffer
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB IgG2b/Fab2a Poly

lyophilizate

Catalog number	Pack size
11 355 830 103	5 mg, 50 mg, 250 mg

Will be supplied as “MAB-IgG(2b)/Fab(2a) Polymer, PolyMAB2b/2a”. Unit of measure is “mg active ingredient”.

For further processing only.

Application

MAB IgG2b/Fab2a Poly mainly covers polymeric interference against IgG2a and/or IgG2b antibodies. It aslo covers Fab neo-epitopes.

Product description

Immunogen: DPH (2b), human S-AMY (2a)
Spleen donor: Mouse Balb/c
Antibody class: IgG2b, kappa/IgG2a, kappa
Preparation: Lyophilized from a solution containing potassium phosphate and NaCl and 6% sucrose . No further preservatives are added.

Properties

Molecular structure: IgG2a-Fab, polymerized with IgG2b; defined molecular range distribution
Remarks: Cannot be used in test systems for determination of DPH, human S-AMY.

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless to slightly opalescent solution in NaCl, 0.9% (c=5 mg/mL)
Turbidity properties: Corresponds to specification
Functional activity (relative titer based on master lot determined by MTP assay): ≥80%
Recommended working concentration: 0.5-500 µg/ml incubation buffer
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

MAB33 IgG1

lyophilizate

Catalog number	Pack size
11 200 941 103	custom fill

Will be supplied as “MABM-33-IgG(DE),SQ MAB 33”. Unit of measure is “g active ingredient”.

For further processing only.

Application

MAB33 IgG1 is used for test formulations employing intact IgG1. MAB33 IgG1 is especially suitable for the elimination of monomeric and specific interference.

Product description

Immunogen: h CK-MM
Spleen donor: Mouse Balb/c
Antibody class: IgG1, kappa
Preparation: Lyophilized from a solution containing potassium phosphate and NaCl. No further preservatives are added.

Properties

Molecular structure: IgG1, monomer
Remarks: Cannot be used in test systems for determination of CK-MM and CK-MB.

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Protein (Biuret): ≥0.7 mg protein/mg lyophilizate
Purity (HPLC / Mono Q): ≥90 area% IgG of total protein
Functional activity (relative titer based on master lot determined by MTP assay): ≥80%
Recommended working concentration: 50-5,000 µg/ml incubation buffer
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

Background information

MAB33 IgG1 is a monoclonal antibody with defined specificity.

MAB33 IgG1/Fab1 Poly

lyophilizate

Catalog number	Pack size
11 368 338 103	5 mg, 50 mg, 250 mg

Will be supplied as "MAB-IgG/Fab (Polymer), SQ Poly MAB 33". Unit of measure is "g active ingredient".

DRY ICE

For further processing only.

Application

MAB33-IgG1/Fab1 Poly is used for assays working with FAB-conjugates. MAB33-IgG1/Fab1 Poly is more efficient for polymeric and less specific types of interferences.

Product description

Immunogen: h CK-MM
Spleen donor: Mouse Balb/c
Antibody class: IgG1
Preparation: Lyophilized from a solution containing potassium phosphate and NaCl and 6% sucrose. No further preservatives are added.

Properties

Molecular structure: IgG1-Fab, polymerized with IgG1; defined molecular range distribution
Remarks: Cannot be used in test systems for determination of CK-MM and CK-MB.

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless to slightly opalescent solution in NaCl, 0.9% (c=10 mg/mL)
Functional activity (relative titer based on master lot determined by MTP assay): ≥80%
Recommended working concentrations: 0.5-500 µg/ml incubation buffer

pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

Background information
The polymer MAB33 IgG1/Fab1 Poly incorporates elements comparable with those of MAB33 IgG1/IgG1 Poly, and also covers interferences against Fab neo-epitopes.

MAB33 IgG1/IgG1 Poly
frozen solution

Catalog number	Pack size
11 939 661 103	5 mg, 50 mg, 250 mg, 1 g, 5 g

Will be supplied as "MAB-33-IgG-Polymer *SQ". Unit of measure is "g active ingredient".

DRY ICE

For further processing only.

Application
MAB33-IgG1/IgG1 Poly is used for test formulations employing intact IgG1. MAB33-IgG1/IgG1 Poly is more efficient for polymeric and less specific types of interferences.

Product description
Immunogen: h CK-MM
Spleen donor: Mouse Balb/c
Antibody class: IgG1
Preparation: Lyophilized from a solution containing potassium phosphate and NaCl and 6% sucrose. No further preservatives are added.

Properties
Molecular structure: Molecular structure: IgG1, polymerized with IgG1; defined molecular range distribution
Remarks: Cannot be used in test systems for determination of CK-MM and CK-MB.

Specification
Appearance: Frozen liquid
Solubility: Yellowish clear to slightly opalescent solution, containing K-phosphate buffer, NaCl and 4% sucrose, pH 7,5
Protein (Biuret): ≥30 mg protein/mg lyophilizate
Purity (HPLC): ≥90 area% IgG of total protein
Functional activity (relative titer based on master lot determined by MTP assay): ≥80%
Recommended working concentration: 0.5-500 µg/mL incubation buffer
Turbidity properties δA_{334}: Corresponds to specification
Bioburden: ≤250 CFU/mL
pH 5.5 treatment (30 minutes): Corresponds to specification

Stability: At -60 to -90°C within specification range for 24 months.
Avoid repeated freezing and thawing.

Background information
MAB33 IgG1/IgG1 Poly is the polymerized chemical version of MAB33 IgG1.

PAB<->H-IgG/Fab Poly
frozen solution

PAB<->H-IgG/Fab Poly is designed as a specific blocker to eliminate false positive/negative antibody-directed interactions.

Application
PAB<->H-IgG/Fab Poly eliminates antibody-directed interactions derived from patient sera in immunoassays employing human and/or chimeric antibody conjugates.

Product description
Preparation: Lyophilized from a solution containing acetic acid, sodium chloride, and 6% sucrose.

Properties
Co-polymerization of human IgG-Fab with IgG ensures highly consistent molecular weight distribution.

Specification
Appearance: White lyophilizate
Solubility: Clear, to slightly opalescent colorless solution in NaCl, 0.9% (c=5 mg/mL)
Protein (Biuret): 0.25-0.60 mg/mg lyophilizate
Relative titer (refers to master lot): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months.

Catalog number	Pack size
11 668 544 103	10 mg (samples), custom fill

Will be supplied as “PAB<->H-IgG/Fab Polymer”. Unit of measure is “g active ingredient”.

For further processing only.

Sheep IgG (PAB<->S-IgG)
lyophilizate

Application
Sheep IgG reduces nonspecific antibody interferences in assays emplyoing sheep antibodies.

Catalog number	Pack size
10 717 606 103	custom fill

Will be supplied as “PAB<->S-IgG”. Unit of measure is “g”.

For further processing only.

Product description

The polyclonal antibody Sheep IgG is lyophilized from a solution containing potassium phosphate and sodium chloride. No preservatives are added. IgG fraction is produced in sheep, purified by anion-exchange chromatography.

Properties

Recommended working concentration: 0.5–1.5 mg/mL

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl, 0.9% (c= 5 mg/mL)
Turbidimetric measurement (A_{546}, against water): ≤100 mE
Protein (Biuret): ≥0.8 mg/mg lyophilizate
Aggregated IgG (TSK 3000): ≤10%
Stability: At -15 to -25°C within specification range for 24 months.

Rabbit IgG (PAB<->K-IgG)

lyophilizate

Catalog number	Pack size
10 912 280 103	custom fill

Will be supplied as "PAB<->K-IgG(DE-FF)". Unit of measure is "g active ingredient".

For further processing only.

Application

Rabbit IgG reduces nonspecific antibody interferences in assays emplyoing rabbit antibodies.

Product description

The polyclonal antibody Rabbit IgG is lyophilized from a solution containing potassium phosphate and sodium chloride. No preservative are added. IgG fraction is produced in rabbit, purified by anion-exchange chromatography.

Specification

Appearance: White lyophilizate
Solubility: Clear to slightly opalescent solution in NaCl 0.9% (c=10 mg/mL)
Protein (Biuret) : ≥0,7 mg/mg lyophilizate
Purity (HPLC / TSK 3000): Corresponds to specification (in comparison to master lot)
Stability: At -15 to -25°C within specification range for 36 months. Avoid repeated freezing and thawing.

Bovine IgG (PAB<->R-IgG)

lyophilizate

Catalog number	Pack size
11 293 621 103	custom fill

Will be supplied as “PAB<->R-IgG(DE) Bovine IgG”. Unit of measure is “g active ingredient”.

DRY ICE

For further processing only.

Application

Bovine IgG reduces nonspecific adsorption of antibodies to the solid phase and other cross-reactive, nonspecific antibody interactions.

Product description

The polyclonal antibody Bovine IgG is lyophilized from a solution containing potassium phosphate and sodium chloride. No preservatives are added. IgG fraction is produced in bovine, purified by anion-exchange chromatography.

Properties

Recommended working concentration: 0.5–2.5 mg/mL

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless solution in NaCl, 0.9% (c=10 mg/mL)
Turbidimetric measurement (A_{546}, against water): ≤100 mE
Protein (Biuret): ≥0.8 mg/mg lyophilizate
Aggregated IgG (HPLC / TSK 3000): ≤5%
Country of origin: USA or NZL
pH 5.5 treatment (30 minutes): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months.

HAMA Serum, Type I

lyophilizate

Catalog number	Pack size
11 767 275 103	1 mL vial

Will be supplied as “Hama-Serum I - Qual. Standard *SQ”. Unit of measure is “piece”.

For further processing only.

Application

HAMA Serum Type I is primarily intended for polyvalent and spontaneous HAMA interference occurring in healthy donors.

Product description

HAMA Serum Type I is a lyophilized human serum with serum ingredients within normal range. No preservative are added. The product must be handled just as carefully as patient specimens.

Properties

pH value (+25°C): 7-8
Protein (Biuret): ≥65 mg/vial
Dilution: Up to 1:20 recommended
Solubility: Reconstitution of lyophilizate/vial in 1 mL water results in serum typical solution
Typical concentrations determined by Roche cobas® assays:
Alpha fetoprotein (AFP): 2.0 IU/mL
Carcinoembryonic antigen (CEA): 1.3 ng/mL
Follicle stimulating hormone (FSH): 10.0 mIU/mL
Human chorionic gonadotropin (HCG): 2.8 mIU/mL
Luteinizing hormone (LH): 8.1 mIU/mL
Prolactin: 160.7 µIU/mL
Prostate specific antigen (PSA): 0.3 ng/mL
PSA free: 0.06 ng/mL
Thyroid stimulating homone (TSH): 2.5 µIU/mL
Troponin T (TN-T): Not detectable

Specification

Appearance: Yellowish lyophilizate
Interference effect: Corresponds to specification
Infectious parameters (determined by FDA approved methods):
Non reactive HbsAg: Corresponds to specification
Anti HIV 1+2: Negative
Anti HCV: Negative
HIV 1 NAT, non reactive: Corresponds to specification
Stability: At -15 to - 25°C within specification range for 24 months.

Background information

HAMA serum interferences in immunoassays can vary within a broad range depending on the person’s immune system.

HAMA Serum, Type II

lyophilizate

Catalog number	Pack size
05 167 060 103	1 mL vial

Will be supplied as “HAMA Serum 2L *SQ”. Unit of measure is “piece”.

For further processing only.

Application

HAMA Serum Type II primarily represents mono-/bivalent and specific HAMA interference occurring after treatment with monoclonal antibodies.

Product description

HAMA Serum Type II is a lyophilized human serum with serum ingredients within normal range. No preservative are added. The product must be handled just as carefully as patient specimens.

Properties

pH value (+25°C): 7-8
Protein (Biuret): ≥65 mg/vial
Dilution: Up to 1:20 recommended
Solubility: Reconstitution of lyophilizate/vial in 1 mL water results in serum typical solution
Typical concentrations determined by Roche cobas® assays:
Alpha fetoprotein (AFP): 3.5 IU/mL
Carcinoembryonic antigen (CEA): 1.2 ng/mL
Follicle stimulating hormone (FSH): 7.0 mIU/mL
Human chorionic gonadotropin (HCG): 3.0 mIU/mL
Luteinizing hormone (LH): 6.7 mIU/mL
Prolactin: 114 µIU/mL
Prostate specific antigen (PSA): 0.3 ng/mL
PSA free: 0.05 ng/mL
Thyroid stimulating homone (TSH): 1.6 µIU/mL
Troponin T (TN-T): 0.01 ng/mL

Specification

Appearance: Yellowish lyophilizate
Interference effect: Corresponds to specification
Infectious parameters:
Non reactive HbsAg: Corresponds to specification
Anti HIV 1+2: Negative
Anti HCV: Negative
HIV 1 NAT, non reactive: Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months.

Background information

HAMA serum interferences in immunoassays can vary within a broad range depending on the person’s immune system.

Bovine Serum Albumin I

lyophilizate

Catalog number	Pack size
11 726 536 103	custom fill

Will be supplied as “Albumin RPLA 1 Assay Quality”. Unit of measure is “kg”.

For further processing only.

Application

Bovine Serum Albumin I reduces nonspecific adsorption to the solid phase or saturates unoccupied binding sites. Bovine Serum Albumin I represents a very high purity grade (≥95%) and is recommended for assays with higher demands on sensitivity.

Product description

BPLA Type I is lyophilized from a solution containing potassium phosphate and sodium chloride. No preservatives are added.

Specification

Appearance: Yellowish lyophilizate
Solubility: Clear to slightly turbid yellowish solution in water (c=60 mg/mL)
A_{405} (against water): ≤0.250
pH value: 6.5-7.5
Protein (from N, elementary analysis, factor 6.25): ≥95%
Purity (HPLC / TSK 3000): ≥95% (monomer)
Water (K. Fischer): ≤5%
Bioburden: ≤50 CFU/g
Ca: ≤0.1%
Fe: ≤0.005%
Cu: ≤0.002%
Complexing agent:
Recovery of Fe: 100±20%
Recovery of Cu: 100 ± 20%
Heavy metals (as Pb): ≤0.002%
P_i: ≤0.005%
Octanoic acid (GC): ≤0.5%
Analysis of T3, T4, Estradiol, Testosterone, Progesterone (for information only): Values stated on certificate of analysis.
Country of origin: USA or NZL
pH 4.5 treatment (up to 3 hours): Corresponds to specification
Stability: At +2 to +8°C within specification range for 24 months. Store dry.

Bovine Serum Albumin IV

lyophilizate

Catalog number	Pack size
11 726 544 103	custom fill

Will be supplied as “Albumin RPLA 4 Assay Quality”. Unit of measure is “kg”.

For further processing only.

Application

Bovine Serum Albumin IV reduces nonspecific adsorption to the solid phase or saturates unoccupied binding sites. Bovine Serum Albumin IV represents a very high purity grade (≥95%) and is recommended for assays with higher demands on sensitivity.

Product description

BPLA Type IV is lyophilized from a solution containing potassium phosphate and sodium chloride. No preservatives are added.

Specification

Appearance: Yellowish lyophilizate
Solubility: Clear to slightly turbid yellowish solution in water (c=60 mg/mL)
A_{405} (against water): ≤0.200
pH value: 6.5-7.5
Protein (from N, elementary analysis, factor 6.25): ≥95%
Purity (HPLC / TSK 3000): ≥95% (monomer)
Water (K. Fischer): ≤5%
Bioburden: ≤50 CFU/g
Ca: ≤0.1%
Fe: ≤0.005%
Cu: ≤0.002%
pH 4.5 treatment (up to 3 hours): Corresponds to specification
Country of origin: USA, NZL
Stability: At +2 to +8°C within specification range for 24 months. Store dry.

Bovine Serum Albumin (BSA), Fraction V

lyophilizate

Catalog number	Pack size
10 738 328 103	custom fill

Will be supplied as ‘‘Albumin, Fraction V from Bovine Serum’’. Unit of measure is ‘‘kg’’.

For further processing only.

Serum albumin protein that has numerous biochemical applications.

Application

Use Bovine Serum Albumin (BSA) as a buffering agent, stabilizer, standard and for blending. Bovine Serum Albumin (BSA) is also a versatile tool against non-specific solid phase interference. As blocking reagent Bovine Serum Albumin (BSA) saturates unoccupied binding sites on the solid phase. Use Bovine Serum Albumin (BSA) typically at a concentration of 0.5 to 3% within the reagent buffer.

CAS: 9048-46-8

Properties

Molecular weight: 68 kD
Bovine Serum Albumin (BSA) contains no detectable IgG.
Bovine Serum Albumin (BSA) is controlled for low molecular weight contaminants.
Bovine Serum Albumin (BSA) consists primarily of monomeric albumin.

Specification

Appearance: Slightly yellow lyophilizate
Solubility: Clear, odourless solution in water
A_{405} (against water): ≤0.200
Albumin (gel electrophoresis): ≥98%
Protein (from N according to elemantary analysis): ≥95%
pH value: 6.8-7.2
Water (K. Fischer): ≤5%
Heavy metals (as Pb): ≤ 0.003%
P_i: ≤0,003%
Chloride (chloride meter): ≤0.15%
Glucose (enzymatic): ≤0.05%
Glycerol (enzymatic): ≤0.005%
L-Lactate (enzymatic): ≤0.1%
Na (flame photometric): ≤0.8%
K (flame photometric): ≤0.015%
Li (flame photometric): ≤0.0005%
Ca: ≤0.05%
Mg: ≤0.005%
Fe: ≤0.002%
Bioburden: ≤100 CFU/g lyophilizate
Country of origin: New Zealand, USA
Stability: At +2 to +8°C within specification range for 24 months.
Store dry.
Remarks:
Official veterinary certificate of health of the donor animals is available.
Official certificate of the deactivation of animal material including the method (acid treatment at pH 5 for 3 hours) is available.

Bovine Serum Albumin (BSA), Fraction V

fatty acids ≤0.2 mg/g, lyophilizate

Catalog number	Pack size
10 774 111 103	custom fill

Unit of measure is ''kg''.

For further processing only.

Highly purified serum albumin protein that has numerous biochemical applications.

Application

Use Bovine Serum Albumin (BSA) as a buffering agent, stabilizer, standard and for blending. Bovine Serum Albumin (BSA) is also a versatile tool against non-specific solid phase interference. As blocking reagent Bovine Serum Albumin (BSA)saturates unoccupied binding sites on the solid phase. Use Bovine Serum Albumin (BSA) typically at a concentration of 0.5 to 3% within the reagent buffer.

CAS: 9048-46-8

Properties

Molecular weight: 68 kD
Bovine Serum Albumin (BSA) contains no detectable IgG.
Bovine Serum Albumin (BSA) is controlled for low molecular weight contaminants.
Bovine Serum Albumin (BSA) consists primarily of monomeric albumin.

Specification

Appearance: Slightly yellow lyophilizate
Protein (from N, according to elementary analysis): ≥97.0%
Water (K. Fischer): ≤5.0%
Na (flame photometric): ≤0.5%
K (flame photometric): ≤0.01%
Fe (AAS): ≤0.001%
Cu (AAS): ≤0.002%
Fatty acids, total (GC): ≤0.2 mg/g
Triglycerides (enzymatic): Not detectable
Immunoglobulines (ELISA): Not detectable
Country of origin: USA
Stability: At +2 to +8°C within specification range for 24 months.
Remarks:
Official veterinary certificate of health of the donor animals is available.
Official certificate of the deactivation of animal material including the method (acid treatment at pH 5 for 3 hours) is available.

Bovine Serum Albumin (BSA), reduced sodium and potassium

lyophilizate

Catalog number	Pack size
11 297 368 103	custom fill

Unit of measure is “kg”.

For further processing only.

Serum albumin protein for tests that require a strongly reduced concentration of sodium and potassium.

Application

Use Bovine Serum Albumin (BSA) as a buffering agent, stabilizer, standard and for blending. Bovine Serum Albumin (BSA) is also a versatile tool against non-specific solid phase interference. As blocking reagent Bovine Serum Albumin (BSA) saturates unoccupied binding sites on the solid phase. Use Bovine Serum Albumin (BSA) typically at a concentration of 0.5 to 3% in the reagent buffer.

CAS: 9048-46-8

Properties

Molecular weight: 68 kD
Bovine Serum Albumin (BSA) contains no detectable IgG.
Bovine Serum Albumin (BSA) is controlled for low molecular weight contaminants.
Bovine Serum Albumin (BSA) consists primarily of monomeric albumin.

Specification

Appearance: Yellowish lyophilizate
A_{405} (against water): ≤0.300
pH value: 4.3-5.3
Protein (Biuret): ≥80%
Water (K. Fischer): ≤5%
Na (AAS): ≤35 ppm
K (AAS) : ≤4ppm
Li (AS) : ≤50ppm
Ca (AAS): ≤500ppm
Fe (bathophenanthrolin): ≤25 ppm
Cu (bathocuproin): ≤15ppm
Heavy metals (as Pb): ≤50ppm
P_i: ≤150ppm
Bioburden: ≤100 CFU/g lyophilizate
NH_4 (enzymatic): ≤10ppm
Glucose (enzymatic): ≤0.02%
Complex creator:
Recovery of Fe: 80-120%
Recovery of Cu: 80-120%
Electrophoresis: Chromatographically homogeneous
Country of origin: Germany
Stability: At +2 to +8°C within specification range for 36 months.

Remarks:
Official veterinary certificate of health of the donor animals is available.
Official certificate of the deactivation of animal material including the method is available.

Poly BSA Type I

frozen solution

Catalog number	Pack size
11 866 737 103	1 g, 5 g, 20 g

Will be supplied as "Poly BSA Type I *SQ". Unit of measure is "g active ingredient".

DRY ICE

For further processing only.

Application

Polymeric BSA Type I is used for the elimination of nonspecific polymeric interferences (*e.g.* for antibodies, conjugates or antigens integrated into infectious disease assays and tumor marker tests).

Product description

Poly BSA Type I is produced from bovine serum albumine (BSA) by polymerization. Its surface is chemically modified by acetylation, and the negative charge of the Poly BSA Type I eliminates hydrophobic interactions. The Poly BSA Type I solution contains protein, potassium-phosphate buffer and preservatives (chloroacetamide, methylisothiazolone and sucrose).

Properties

Recommended working concentration: 0.1-20 mg/mL incubation buffer.

Specification

Appearance: Yellowish, clear to slightly opalescent solution (frozen)
pH value (+25°C): 6.8-7.2
Protein (Biuret): ≥40 mg/mL
Particle size (Photon correlations spectrometry): 15-45 nm
Country of origin: USA
pH 4.5 treatment (up to 3 hours): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

Poly BSA Type II

frozen solution

Catalog number	Pack size
11 816 438 103	1 g, 5 g, 20 g

Will be supplied as “poly BSA Type II *SQ”. Unit of measure is “g active ingredient”.

For further processing only.

Application

Polymeric BSA Type II is used for the elimination of nonspecific polymeric interferences (*e.g.* for antibodies, conjugates or antigens integrated into infectious disease assays and tumor marker tests).

Product description

Poly BSA Type II is produced from bovine serum albumine (BSA) by polymerization. Its surface is chemically modified by succinylation, and the negative charge of the Poly BSA Type II eliminates hydrophobic interactions.The Poly BSA Type II solution contains protein, potassium-phosphate buffer, and preservatives (chloroacetamide, methylisothiazolone and sucrose).

Properties

Recommended working concentration: 0.1-20 mg/ml incubation buffer

Specification

Appearance: Yellowish, clear to slightly opalescent solution (frozen)
pH value (+25°C): 6.8-7.2
Protein (Biuret): ≥40 mg/mL
Particle size (Photon correlations spectrometry): 25-55 nm
Country of origin: USA
pH 4.5 treatment (up to 3 hours): Corresponds to specification
Stability: At -15 to -25°C within specification range for 24 months. Avoid repeated freezing and thawing.

Streptavidin rec. inactive, Poly

frozen solution

Catalog number	Pack size
11 922 122 103	0.01, 0.4 g, custom fill

Will be supplied as “Streptavidin rec. inactive, Poly”. Unit of measure is “g active ingredient”.

DRY ICE

For further processing only.

Streptavidin rec. inactive, Poly is designed as a specific blocker for streptavidin directed interactions derived from patient sera.

Application

Blocking of interferences in immunoassay formats employing streptavidin/biotin-system.

Properties

It is prepraed as frozen solution containing 50 mM KPO_4, 8% saccharose, pH 6.6.

Specification

Appearance: Opalescent suspension
Function test on Elecsys® TnT hs: Corresponds
Unencumbered based on reference (1 week, +35°C, only loaded R2): Corresponds
Stability: At -60 to -90°C within specification range for 12 months.

Alkaline Phosphatase Mutein, recombinant

from calf intestine, expressed in *Pichia pastoris*, lyophilizate

Catalog number	Pack size
04 781 007 103	custom fill

Will be supplied as “AP-Mutein, rec.”. Unit of measure is “g”.

For further processing only.

Application

Use Alkaline Phosphatase Mutein (AP Mutein) to eliminate human serum derived AP directed assay interferences.

Product description

In addition to the AP Mutein, recombinant the lyophilizate contains a mixture of proteins from the *Pichia* system supporting the interference elimination. AP Mutein is lyophilized from a solution containing in NaCl, 0.2 mol/L; $ZnCl_2$, 0.1 mmol/L; Tea, 30 mmol/L; $MgCl_2$, 1 mmol/L; raffinose, 50% (w/v); pH approximately 7.6. Production is established according to the procedures of the active enzyme.

EC 3.1.3.1

Specification

Appearance: White to yellowish lyophilizate
Solubility: Clear to light yellowish solution in 50% glycerol solution (c=10 mg/mL)
pH value: 7.0–8.0
Protein (A_{280}, 1 mg/mL=1, against water): ≥0.2 mg protein/mg lyophilizate
Specific activity (+37°C, 4-NPP): ≤10 U/mg protein

SDS-gel (qualitative comparison of the gel bands in reference to the bands of a standard): Corresponds to specification
Stability: At +2 to +8°C within specification range for 24 months.

Background information

Alkaline Phosphatase Mutein (AP Mutein), recombinant, is the inactive form of recombinant highly active AP, expressed in *Pichia pastoris*. The inactivation of AP Mutein is based on one single point mutation located in the active site of the alkaline phosphatase.

β-Galactosidase Mutein

from *E. coli* overproducer, lyophilizate

Catalog number	Pack size
11 184 024 103	custom fill

Will be supplied as "β-Galactosidase Mutein". Unit of measure is "mg active ingredient".

DRY ICE

For further processing only.

Application

Use β-Galactosidase Mutein to eliminate β-galactosidase directed interferences in immunoassays derived from human sera.

EC 3.2.1.23

Properties

β-Galactosidase Mutein is identical to native β-galactosidase with respect to immuno-reactivity, conjugation, properties, surface charge, hydrophobicity, molecular weight, production procedure and down stream processing.

Specification

Appearance: White lyophilizate
Solubility: Clear, colorless to light opalescent solution in water (c=20 mg/mL)
Protein (Biuret): 0.15-0.30 mg/mg lyophilizate
Specific activity (10 mg/ml, +37°C, 2-nitrophenyl-β-D-galactopyranoside): ≤0.2 U/mg protein
Aggregated β-Galactose Mutein (TSK 4000): ≤10%
Immunoreactivity (based on ML): 80-120%
Stability: At -15 to -25°C within specification range for 24 months.

Background information

β-Galactose Mutein from *E.coli* is constructed using site-directed mutagenesis of single amino acids in the active site.

Alkaline Phosphatase, EIA Grade

from calf intestine, solution

Catalog number	Pack size
10 556 602 103	custom fill

Will be supplied as ''Phosphatase, Alkaline, Calf Intestine''. Unit of measure is ''g''.

For further processing only.

Application

Marker enzyme for preparing antibody- / antigen-enzyme conjugates incorporated in immunoassay reagents for colorimetric, fluorimetric and luminometric detection.

EC 3.1.3.1

Properties

Nomenclature: Orthophosphoric-monoester phosphohydrolase (alkaline optimum)
Molecular weight: ≥57 kD
Inhibitors: P_i, metal chelating agents, divalent heavy metal ions (*e.g.*, Be^{2+}, Zn^{2+}), many amino acids (*e.g.,* L-phenylalanine, L-tryptophan, L-cysteine), iodosobenzoate, iodoacet-amide.
Activators: Mg^{2+}, Co^{2+}, Mn^{2+}
pH optimum: 9.8
pH stability: 8.0
Thermal stability: Up to +40°C

Specification

Appearance: Clear, colourless solution in NaCl, 3 mol/L; $MgCl_2$, 1 mmol/L; $ZnCl_2$, 0.1 mmol/L; Tea, 30 mmol/L
pH value: 7.0–8.0
Protein (A_{280}, 1 mg/ml=1, against water): ≥10 mg/mL
Specific activity (+37°C, 4-NPP): ≥3,000 U/mg
Alkaline Phosphatase (HPLC): ≥95 area% (HPLC profile added to certificate)
Amino groups: 8–16 mol/mol
Carbohydrates, n=2: No limit
Molecular weight: ≥57,000 D
NH_4: ≤30 ppm
pH 5.5 treatment (30 minutes): Corresponds to specification
Origin of bovine intestine: NZL
Stability: At +2 to +8°C within specification range for 15 months.

Background information

Alkaline phosphatase catalyzes the hydrolysis of numerous phosphate esters, such as esters of primary and secondary alcohols, sugar alcohols, cyclic alcohols, phenols and amines. Phosphodiesters do not react with Alkaline Phosphatase, EIA Grade. The enzyme hydrolyzes PP_i. The kinetic properties of the enzyme depend on many factors, such as purity of enzyme, concentration of enzyme in the assay, buffer, pH etc.

Alkaline Phosphatase, recombinant, highly active

from calf intestine, expressed in *Pichia pastoris*, solution

Catalog number	Pack size
03 137 031 103	custom fill

Will be supplied as “AP, Yeast, high act., rec., EIA, NaCl”. Unit of measure is “g”.

For further processing only.

Application

Marker enzyme for preparation of antibody- / antigen-enzyme conjugates incorporated in highly sensitive immunoassay reagents for colorimetric, fluorimetric and luminometric detection. Alkaline Phosphatase is recommended for conjugation via carbohydrate groups (content approximately 30%).

EC 3.1.3.1

Properties

IEP (IEF, CE): 3.6-4.7
MALDI-TOF MS:
Total molecular weight: 124±10 kD
Molecular weight protein: 104 kD (=84%)
Molecular weight carbohydrate: 20±10 kD (16±6%)
Accessible N-glycosylation sites: 2/subunit
Branching type: Higher branched (hybrid) type GlcNAc, Mannose, no NeuAc detected
O-glycosylation sites: Not detected
Number of isoenzymes:
Present: 3 (MS)
Based on protein: 1 (MS)

Specification

Appearance: Clear, colorless solution in NaCl, 3 mol/L; $MgCl_2$, 5 mmol/L; $ZnCl_2$, 0.1 mmol/L; Tea, 30 mmol/L, pH approximately 7.6
pH value: 7.0-8.0
Protein (A_{280}, 1 mg/ml=1, against water): 20±1 mg/mL
Specific activity (+37°C, 4-NPP): ≥7,000 U/mg
Alkaline Phosphatase (HPLC): ≥95 area% (HPLC profile added to certificate)
Amino groups: 5-13 mol/mol
Carbohydrates, n=2: No limit
Stability: At +2 to +8°C within specification range for 12 months.

Background information

Alkaline Phosphatase recombinant, highly active catalyzes the hydrolysis of numerous phosphate esters, such as esters of primary and secondary alcohols, sugar alcohols, cyclic alcohols, phenols and amines. Phosphodiesters do not react with Alkaline Phosphatase, recombinant. The enzyme hydrolyzes PP_i. The kinetic properties of the enzyme depend on many factors, such as purity of enzyme, concentration of enzyme in the assay, buffer, pH etc.

Alkaline Phosphatase, recombinant, highly active, carbohydrate reduced

from calf intestine, expressed in *Pichia pastoris*, solution

Catalog number	Pack size
03 535 452 103	custom fill

Will be supplied as “AP, highly active, recombinant, CR”. Unit of measure is “g”.

For further processing only.

Application

Marker enzyme for preparation of antibody- / antigen- enzyme conjugates incorporated in highly sensitive immunoassay reagents for colorimetric, fluorimetric and luminometric detection. Recommended for conjugation via amino groups.

EC 3.1.3.1

Properties

IEP (IEF, CE): 5.2-6.0
MALDI-TOF MS:
Total molecular weight: 111 kD
Molecular weight protein: 104 kD (= 94%)
Molecular weight carbohydrates: 6.5 kD (= 6%)
Accessible N-glycosylation sites: 2/subunit
Branching type: Reduced branched type GlcNAc, Mannose no NeuAc detected
O-glycosylation sites: Not detected
Number of isoenzymes:
Present: 1 (MS)
Based on protein: 1 (MS)

Specification

Appearance: Clear, colourless solution in NaCl, 3 mol/L; $MgCl_2$, 5 mmol/L; $ZnCl_2$, 0.1 mmol/L; Tea, 30 mmol/L, pH approximately 7.6
pH value: 7.0-8.0
Protein (A_{280}; 1 mg/ml=1; against water): 20±1 mg/mL
Specific activity (+37°C, 4-NPP): ≥ 7000 U/mg
Alkaline Phosphatase (HPLC): ≥95 area% (HPLC profile added to certificate)
Amino groups: 5-13 mol/mol
Carbohydrates, n=2: ≤7%
Stability: At +2 to +8°C within specification range for 12 months.

Background information

AP recombinant, highly active CR catalyzes the hydrolysis of numerous phosphate esters, such as esters of primary and secondary alcohols, sugar alcohols, cyclic alcohols, phenols and amines. Phosphodiesters do not react with Alkaline Phosphatase, recombinant. The enzyme hydrolyzes PP_i. The kinetic properties of the enzyme depend on many factors, such as purity of enzyme, concentration of enzyme in the assay, buffer, pH and others. The product contains a significantly reduced carbohydrate moiety.

β-Galactosidase

from *E. coli*, lyophilizate

Catalog number	Pack size
11 291 963 103	custom fill

Will be supplied as "β-Galactosidase, Lyo.". Unit of measure is "MU".

For further processing only.

Application

Marker enzyme for the manufacturing of antibody- and antigen-enzyme conjugates incorporated in immunoassays for colorimetric and fluorimetric detection.

EC 3.2.1.23

Properties

Nomenclature: β-D-galactohydrolase
Molecular weight (by sequence): 465 kD
Structure: 4 identical subunits; β-galactosidase contains no carbohydrates

Specification

Appearance: White lyophilizate
pH value (c=10 mg/mL, in water): 7.0-8.0
Protein (Biuret): 0.25-0.5 mg/mg lyophilizate
Activity (+37°C, 2-NP-β-D-galactoside): ≥120 U/mg lyophilizate
Specific activity (+37°C, 2-nitrophenyl-β-D-galactopyranoside): ≥300 U/mg protein
Contaminants (expressed as percentage of β-Galactosidase activity):
β-Fructosidase: ≤0.001
α-Galactosidase: ≤0.001
Glucose-DH: <0.001
α-Glucosidase: ≤0.001
''NADH oxidase'': ≤0.001
Na (flame photometric): ≤2,500 ppm
Stability: At +2 to +8°C: within specification range for 12 months. Store dry.

Background information

β-Galactosidase hydrolyzes ß-D-galactosides.

β-Galactosidase, recombinant, EIA Grade

from *E. coli* overproducer, lyophilizate

Catalog number	Pack size
10 570 079 103	custom fill

Will be supplied as "β-Galactosidase, *E. coli*". Unit of measure is "g active ingredient".

DRY ICE

For further processing only.

Application

Marker enzyme for the manufacturing of antibody- and antigen-enzyme conjugates incorporated in immunoassays for colorimetric and fluorimetric detection.

EC 3.2.1.23

Properties

Nomenclature: β-D-galactohydrolase
Molecular weight (by sequence): 465 kD
Structure: 4 identical subunits, β-galactosidase contains no carbohydrates
Isoelectric point: 4.61
Michaelis constants:
Tris buffer, pH 7.6, +20°C / relation rate:
2-nitrophenyl-β-galactoside: 9.50 x 10^{-4} mol/L / 1.00
phenyl-β-D-galactoside: 3.23 x 10^{-3} mol/L / 0.05
lactose: 3.85 x 10^{-2} mol/L / 0.06
4-nitrophenyl-β-galactoside: 4.45 x 10^{-4} mol/L / ~0.50
Activators: Mg^{2+} and Na^{+} (or other monovalent cations) are essential for activity.
pH optimum: 8.0
pH stability: 6.0
Thermal stability: Up to +37°C
Thiol groups: 64 SH groups, approximately 16 of these are accessible for SH-reactive reagents. 4 of these (Cys 76) take part in conjugation.

Specification

Appearance: White lyophilizate, stabilized with phosphate buffer and sucrose
Solubility: Clear, colorless solution in water (c=20 mg/mL)
Protein (Biuret): Approximatly 0.25 mg/mg lyophilizate
Specific activity (+37°C, 2-nitrophenyl-β-D-galactopyranoside): ≥700 U/mg protein
SH-groups, free (after dialysis): ≥12 mol/mol enzyme (corresponds to 465,000 g)
Aggregated β-galactosidase (HPLC): ≤3 area% (dimer-part with a molar mass of 0.93 x 10^{6} D)
Stability: At -15 to -25°C within specification range for 24 months. Store under nitrogen.

Background information

β-Galactosidase hydrolyzes ß-D-galactosides. Although the enzyme activity with 2-nitrophenyl-β-D-galactoside as substrate is higher than with the 4-isomer, the enzyme reaction with the 4-compound is more sensitive due to a higher absorption coefficient for 4-nitrophenol, ε_{405}: 18.5 [$mmol^{-1}$ x l x cm^{-1}].

Peroxidase (POD), EIA Grade

from horseradish, lyophilizate

Catalog number	Pack size
10 815 462 103	custom fill

Will be supplied as ''Peroxidase (POD) from Horse-radish''. Unit of measure is ''g''.

For further processing only.

Application

Peroxidase (POD), EIA Grade is a marker enzyme enabling peroxidation of reduced dyes in the indicator reaction producing a color, fluorimetric or luminescent derivative of the labeled molecule for further detection and quantification.

EC 1.11.1.7

Properties

Horseradish peroxidase is a 44,173.9 D glycoprotein with 4 lysine residue.

Specification

Appearance: Red-brown lyophilizate
Activity (+25°C, guaiacol, H_2O_2) : ≥225 U/mg lyophilizate
Specific Activity (+25°C, ABTS, H_2O_2, pH 5.0): ≥900 U/mg lyophilizate
Purity number (A_{403}/A_{275}): 3.0–3.5
A_{403} (0.2 mg/ml, against buffer): No limit
Contaminants (expressed as percentage of Peroxidase activity):
ATPase: ≤0.001
Catalase: ≤0.7
Phosphatase, acidic: ≤0.001
Isoenzyme distribution (HPLC): ≥90% (homogeneous with respect to isoenzyme C)
Amino groups: 2-3 mol/mol enzyme
Carbohydrates: 12.0–14.5% (w/w)
Stability: At -15 to -25°C within specification range for 24 months. Keep tightly sealed.

Peroxidase (POD), Grade I

from horseradish, lyophilizate

Catalog number	Pack size
10 121 606 103	custom fill

Will be supplied as ''Peroxidase (POD), Grade I, Horse-radish''. Unit of measure is ''MU''.

For further processing only.

Application

Peroxidase (POD), Grade I is a marker enzyme enabling peroxidation of reduced dyes in the indicator reaction producing a color, fluorimetric or luminescent derivative of the labeled molecule for further detection and quantification.

EC 1.11.1.7

Properties

Horseradish peroxidase is a 44,173.9 D glycoprotein with 4 lysine residue.

Specification

Appearance: Red-brown lyophilizate
Solubility: Clear, red-brown solution in water (c=10 mg/mL)
pH value (c=10 mg/mL): 6.0–7.0
Activity (+25°C, guaiacol, H_2O_2): ≥250 U/mg lyophilizate
Purity number (A_{403}/A_{275}): 3.0–3.5
Contaminants (expressed as percentage of Peroxidase activity):
ATPase: ≤0.001
Catalase: ≤0.7
Phosphatase, acidic: ≤0.001
Stability: At +2 to +8 within specification range for 24 months. Keep tightly sealed.

Poly Peroxidase (Poly POD), EIA Grade

from horseradish, lyophilizate

Catalog number	Pack size
11 578 545 103	custom fill

Will be supplied as "Peroxidase, Polymerized (MH)". Unit of measure is "mg active ingredient".

DRY ICE

For further processing only.

Application

Poly Peroxidase (Poly POD) is a marker enzyme enabling peroxidation of reduced dyes in the indicator reaction producing a color, fluorimetric or luminescent derivative of the labeled molecule for further detection and quantification.

Product description

Poly Peroxidase is lyophilized in 10 mmol/L potassium phosphate, 50 mmol/l NaCl, 1 mmol/L EDTA, pH 6.1and saccharose as stabilizer.

EC 1.11.1.7

Properties

Molecular weight: 0.8 ± 0.2 x 10^6 D (~ 20 POD-monomers)
Activation: Is accomplished by MHS (Maleimidohexanoyl-N-hydroxysuccinimide ester) ≥40 MH-groups per Poly POD (MH) are accessible for conjugation with sulfhydryl groups.

Specification

Appearance: Red-brown lyophilizate
Solubility: Clear, red-brown solution in water (c= 5 mg/mL)
Specific activity (+25°C, ABTS): ≥600 U/mg
MH-groups: ≥2 (mol MH/mol POD)
Stability: At -60 to -90°C within specification range for 48 months.

Chlorophenolred-beta-D-galactopyranoside (CPRG) high pure

sodium salt, powder

Catalog number	Pack size
07 930 097 103	custom fill

Will be supplied as “CPRG high pure”. Unit of measure is “g”.

DRY ICE

For further processing only.

Application

Use CPRG high pure as a substrate for ß-Galactosidase.

Properties

Formula: $C_{25}H_{21}O_{10}Cl_2SNa$
Molecular weight: 607.4 D

Specification

Identity (HPLC): Corresponds to specification
Appearance: Orange-red powder
Solubility: Clear, red colored solution in water (c=20 mg/mL)
A_{578} (c=5 mmol/l water) : ≤0.090
A_{650} (c=5 mmol/l water; turbidity): ≤0.030
Purity (HPLC, 265 nm): ≥97.5 area%
Purity (HPLC, 220 nm): ≥88 area%
Carbinol (HPLC): ≤10 area%
Total (CPRG+Carbinol, HPLC): ≥98 area%
Assay CPRG (A_{405}): 80-110%
Na (flame photometric): 3-4%
Water (K. Fischer): ≤15%
Thin layer chromatography: Corresponds to reference
Chlorophenolred, free: ≤0.075%
Galactose, free (enzymatic): ≤5.0%
Reaction rate (β-galactosidase) of sample/CPRG standard: 80-120%
Reaction rate (β-galactosidase) of sample/2-NP-galactoside: ≥8.5%
Stability: At -15 to -25°C within specification range for 36 months.
Store dry. Keep tightly closed.

Chlorophenolred-β-D-galactopyranoside (CPRG)

sodium salt, powder

Catalog number	Pack size
11 379 119 103	custom fill

Will be supplied as “Chlorophenolred-beta;-D-galactopyranoside (CPRG)”.Unit of measure is “g”.

DRY ICE

For further processing only.

Application

Use CRPG as a substrate for β-Galactosidase.

CAS: 99792-79-7

Properties

Formula: $C_{25}H_{21}O_{10}Cl_2SNa$
Molecular weight: 607.4 D

Specification

Identity (HPLC): Corresponds to specification
Appearance: Orange-red powder
Solubility: Clear, red colored solution in water (c=20 mg/mL)
A_{578} (c=5 mmol/L water) : ≤0.200
A_{650} (c=5 mmol/L water; turbidity): ≤0.030
Purity (HPLC, 265 nm): ≥97.5 area%
Purity (HPLC, 220 nm): ≥88 area%
Carbinol (HPLC): ≤10 area%
Total (CPRG+Carbinol, HPLC): ≥98 area%
CPRG (A_{405}): 80-110%
Na (flame photometric): 3-4%
Water (K. Fischer): ≤15%
Thin layer chromatography: Corresponds to reference
Chlorophenolred, free: ≤0.1%
Galactose, free (enzymatic): ≤5.0%
Reaction rate (β-galactosidase) of sample/CPRG standard: 80-120%
Reaction rate (β-galactosidase) of sample/2-NP-galactoside: ≥8.5%
Stability: At -15 to -25°C within specification range for 36 months.
Store dry. Keep tightly closed.

3,3',5,5'-Tetramethylbenzidine (TMB)

crystalline powder

Catalog number	Pack size
10 203 700 103	custom fill

Will be supplied as "3,3'5,5'-Tetramethylbenzidine". Unit of measure is "kg".

For further processing only.

Application

Use TMB as substrate solution for horse radish peroxidase (450 nm).

CAS: 54827-17-7

Properties

Formula: $C_{16}H_{20}N_2$
Molecular weight: 240.35 D

Specification

Appearance: Yellowish to light brown crystalline powder
Melting range: +168 to +171°C
TMB (GC): ≥99.5 area%
TMB (titrimetric, based on dry weight): ≥97.5%
Loss on drying (for 2 hours at +105°C): ≤1%
Stability: At +2 to +8°C within specification range for 24 months.
Protect from light.

4-Aminophenyl Phosphate (pAPP)

disodium salt, powder

Catalog number	Pack size
05 642 965 103	custom fill

Will be supplied as "4-Aminophenyl Phosphate Disodium Salt". Unit of measure is "kg".

For further processing only.

Application

Use 4-Aminophenyl Phosphate (pAPP), Disodium Salt as substrate for alkaline phosphatase.

CAS: 75966-16-4

Properties

Formula: $C_6H_7NO_4PNa$
Molecular weight: 211.09 D

Specification

Appearance: Off white to brownish powder
Solubility: Clear, fawn to brownish solution in water (c=100 mg/mL)
pH value: 7.0-8.0
ESI-MS: 188.011±0.005 D
pAPP (HPLC): ≥90 area%
Water (K. Fischer): ≤15%
Na (flame photometric): 15-21%
p-Nitrophenylphosphate (HPLC): ≤0.3 area%
Cl: ≤0.1%
P_i (acid labile): ≤0.5%
P_i: ≤1%
Stability: At +2 to +8°C within specification range for 24 months. Protect from light.

4-Nitrophenyl Phosphate (pNPP)

disodium salt, crystalline powder

Catalog number	Pack size
10 004 847 103	custom fill

Will be supplied as ''4-Nitrophenyl Phosphate, Disodium Salt''. Unit of measure is ''kg''.
Additional formulation: Tablets are available on request.

For further processing only.

Application

Use pNPP as a substrate for alkaline phosphatase.

CAS: 4264-83-9

Properties

Formula: $C_6H_4NO_6PNa_2 \times 6\ H_2O$
Molecular weight: 371.1 D (pNPP: 219.1 D)
Detection: at 405 nm

Specification

Appearance: White to slightly yellow crystalline powder
Solubility: Clear, colorless to slightly yellow solution in water (c=50 mg/mL)
pH value: 9±1

4-NPP-Na$_2$ x 6 H$_2$O (calculated from value found enzymatically): ≥95%
4-NPP (enzymatic): ≥56%
Na (flame photometric): 13±1%
Water (K. Fischer): 28±3%
4-Nitrophenol (free): ≤0.07%
P$_i$: ≤ 0.3%
Blank (with TC AP$_{opt.}$ ΔA/30 min) : ≤0.015
Reactions rates (AP): 100±5%
Stability: At +2 to +8°C within specification range for 24 months.
Protect from light.

5-Bromo-4-chloro-3-indolyl-phosphate (BCIP)

toluidin, crystalline powder

Catalog number	Pack size
10 760 978 103	custom fill

Will be supplied as "5-Br-4-Cl-3-indolyl-phosphate". Unit of measure is "g".

For further processing only.

Application

Use BCIP as precipitating substrate for alkaline phosphatase.

CAS: 6578-06-09

Properties

Formula: $C_8H_6NO_4BrClP$ x C_7H_9N
Molecular weight: 433.6 D (BCIP: 326.4 D)
Detection: Forms a blue precipitate

Specification

Appearance: White to slightly yellowish microcrystalline powder
BCIP x toluidine (from N): ≥99%
BCIP x toluidine (HPLC): ≥99 area%
N (elementary analysis): 6.39-6.60%
Performance test (incubation with alkaline phosphatase, aerial oxidation): Blue precipitate
Stability: At +2 to +8°C within specification range for 24 months.
Store dry. Protect from light.

Human Serum

frozen solution

Catalog number	Pack size
11 758 225 103	9 L (samples 100 mL)

Will be supplied as “Serum <-> Human”. Unit of measure is “L”.

For further processing only.

Qualified for **cobas**® platforms

Application

Basic matrix for manufacturing calibrators and controls for immunoassays and assays in clinical chemistry.

Product description

Frozen solution from pooled blood donors.

Specification

Appearance of solution: Yellowish slight turbid liquid
Turbidity: ≤0.600 E
pH value (+25°C): 7.0-7.5
Protein (Biuret): ≥65 mg/mL
Cholesterol: ≥135 mg/dL
Triglyceride: 65-206 mg/dL
Ca: ≤2.2 mmol/l
Cholinesterase: ≥4,700 U/L
Creatine kinase: ≤265 U/L
Bioburden: ≤1,000 CFU/mL
Non-reactive in HBsAg: Corresponds to specification
Anti-HIV I+II: Negative
Anti-HCV: Negative
HCV NAT non-reactive: Corresponds to specification
HIV-1 NAT non-reactive: Corresponds to specification
Stability: At -15 to -25°C within specification range for 12 months.

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