

Myeloma Source Immunoglobulins

Cat. No.	Specificity	Quantity
642311	Human IgG ₁	0.1 mg
642321	Human IgG ₂	0.1 mg
642331	Human IgG ₃	0.1 mg
642341	Human IgG ₄	0.1 mg
643341	Mouse IgA MOPC 315/λ2 TEPC 15/κ	1 mg
643351	Mouse IgG ₁ MOPC 21/κ	1 mg
643361	Mouse IgG _{2b} UPC 10/κ RPC 5/κ	1 mg
643371	Mouse IgG _{2b} MOPC 195/κ MOPC 141/κ	1 mg
643381	Mouse IgG ₃ FLOPC 21/κ J606/κ	1 mg
643391	Mouse IgM MOPC 104E/λ ₁ ABPC 22/κ	1 mg
643041	Rat IgA	1 mg
643051	Rat IgG ₁	1 mg
643061	Rat IgG _{2a}	1 mg
643071	Rat IgG _{2b}	1 mg
643081	Rat IgG _{2c}	1 mg
643091	Rat IgM	1 mg

Miscellaneous Proteins

150274	Allophycocyanin	500 μg
		1 mg
		5 mg
770941	α ₁ -Antichymotrypsin	100 μg
770942		500 μg
770943		1 mg
771003	CA 15-3 (Breast Tumor Marker Antigen)	5 KU
771002	Iodination Grade	10 KU
771001		20 KU
770973	CA 19-9 (GI-Pancreatic Tumor Marker Antigen)	5 KU
770972	Iodination Grade	25 KU
770971		50 KU
770963	CA 19-9 (GI-Pancreatic Tumor Marker Antigen)	5 KU
770962	Research Grade	25 KU
770961		50 KU
770983	CA 72-4 (Human Antigen)	5 KU
770982	Iodination Grade	25 KU
770981		50 KU
770931	α-Fetoprotein, Human Cord Serum	100 μg
770932	Iodination Grade	500 μg
770933		1 mg
193550	Hemocyanin	5 mg
		25 mg
		100 mg
770951	β ₂ Microglobulin	100 μg
770952		500 μg
770953		1 mg

SUPPLEMENTARY REAGENTS

Labeling Reagents

Avidin/Streptavidin

Progress in ELISA, immunoblotting and immunohistochemical techniques has led to widespread use of the avidin/streptavidin-biotin interaction. Both avidin and streptavidin demonstrate high affinity for biotin rendering this reaction as an extremely sensitive detection method.

Cat. No.	Description	Quantity
55827	Avidin	5 mg
55963	Avidin-AP	1 mg
623531	Avidin-AP	2 ml
55880	Avidin-FITC	5 mg
623501	Avidin-FITC	5 mg
55898	Avidin-HRP	5 mg
623521	Avidin-HRP	2 ml
55894	Avidin-Texas Red®	5 mg
623001	Streptavidin	1 mg
623431	Streptavidin-AP	2 ml
623411	Streptavidin-FITC	1 mg
623441	Streptavidin-HRP	2 ml

Biotin Conjugates

55964	Biotin-AP	1 ml
622671	Biotin-AP	2 mg
622681	Biotin-HRP	5 mg
622611	Biotin Hydrazide	100 mg
622601	Biotin- N-Hydroxysuccinimide Ester	100 mg
622651	Biotin-Protein A	2 mg
622661	Biotin-Protein G	1 mg

FITC

55879	Fluorescein 5-Isothiocyanate, Isomer I	100 mg
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Enzymes

364841 -20°C	ALKALINE PHOSPHATASE [9001-78-9] Labeling Grade	5 KU
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Lyophilized powder containing 30% carbohydrate as a stabilizer.

Activity: 1,000 units/mg of protein
There is no detectable adenosine deaminase, adenosine 5'-monophosphate deaminase or phosphodiesterase activities.

Unit Definition: one unit will liberate 1 μmole of p-nitrophenol from p-nitrophenylphosphate per minute at 37° by the Bessey¹ assay procedure.

Ref.: Bessey, O.A., et al., *J. Biol. Chem.*, **164**, 321 (1946).

CATALOG
NUMBER

193561 **ALKALINE PHOSPHATASE** 1 mg
0-5°C [9001-78-9] 5 mg
 (EC 3.1.3.1.) 25 mg
From Calf Intestine
 Suspension in 70% Ammonium sulfate, pH 7.0.
Activity: ~60,000 units/ml
Unit Definition: one unit causes hydrolysis of one micromole of p-nitrophenyl phosphate per minute at pH 9.6 and 25°C.

PEROXIDASE

[9003-99-0]

From Horseradish Roots

RZ: ~3.0

Activity: 250 units/mg

This product is ideal for production of peroxidase conjugated antisera.

Unit Definition: one unit catalyzes the conversion of 1 μmole of peroxide per minute at 25°C, pH 7.0 in the guaiacol assay of Putter.

Ref.: Putter, J., *Methods of Enzymatic Analysis*, 2, 685 (1974).

364511 10 mg
364512 100 mg
364514 1 g

Substrates and Buffers

For added convenience, a complete line of chromogen substrates are available in ready-to-use liquid form or easy-to-use concentrate form. Additionally, ICN offers a complete line of powdered substrates and buffers for various protocols. For more details, please contact ICN Technical Service at biotech@icnbiomed.com.

Alkaline Phosphatase Substrates

BCIP/INT LIQUID SUBSTRATE

(5-Bromo-4-chloro-3-indolyl Phosphate/p-Iodonitrotetrazolium)

Stabilized Chromogen Solution

Similar to BCIP/NBT but results in an intense orange color. Concentration: 0.46 mmol/liter BCIP; 0.79 mmol/liter INT.

821819 100 ml
821820 500 ml

BCIP/NBT LIQUID SUBSTRATE

(5-Bromo-4-chloro-3-indolyl Phosphate/Nitroblue Tetrazolium)

Stabilized Chromogen Solution

Specially prepared for immunoblotting procedures only. Concentration: 0.692 mmol/liter BCIP; 0.734 mmol/liter NBT.

980871 100 ml
980872 500 ml

BCIP/NBT PLUS LIQUID SUBSTRATE

(5-Bromo-4-chloro-3-indolyl Phosphate/Nitroblue Tetrazolium)

Stabilized Chromogen Solution

Ideal for both immunoblotting and immunohistochemical procedures. Greater sensitivity and produces little or no background staining compared with other alternatives. Concentration: 0.692 mmol/liter BCIP; 0.734 mmol/liter NBT.

980771 100 ml
980772 500 ml

CATALOG
NUMBER

BCIP/NBT

STABILIZED CHROMOGEN SOLUTION

This alkaline phosphatase chromogen solution contains the two components in a stabilized solution which may be used as the final step in color development. The resulting product is a permanent, deep-purple stain. It enhances results in both ELISA and immunohistology assays utilizing peroxidase and alkaline phosphatase.

980621 100 ml
980622 250 ml

BCIP/TNBT LIQUID SUBSTRATE

(5-Bromo-4-chloro-3-indolyl Phosphate/Tetranitroblue Tetrazolium)

Stabilized Chromogen Solution

Similar to BCIP/NBT Plus but is more sensitive and produces an intense purple color. It is highly useful in double antibody staining procedures when used with BCIP/INT where phosphatase labeled antibodies are preferred. Concentration: 0.452 mmol/liter BCIP; 0.432 mmol/liter TNBT.

821821 100 ml
821822 500 ml

5-BROMO-4-CHLORO-3-INDOLYL PHOSPHATE LIQUID SUBSTRATE (BCIP)

Stabilized Substrate

Ideal, ready-to-use solution for immunoblotting and immunohistochemical procedures. Concentration: 2.31 mmol/liter.

980781 100 ml
980782 500 ml

193989 100 mg
0°C [102185-33-1] 500 mg

Molecular Biology Reagent

Disodium Salt

Purity: >98%

Chromogenic substrate for alkaline phosphatase in ELISA.

$C_8H_4BrClNO_4PN_2$ MW 370.4

193991 25 mg
RT [6578-06-9] 100 mg

Molecular Biology Reagent

p-Toluidine Salt

Purity: ≥98%

A chromogenic substrate for alkaline phosphatase in ELISA.

$C_8H_6BrClNO_4P \cdot C_7H_9N$ MW 433.6

191233 25 g
RT [4274-03-7]

(Diazo Red)

C.I. 37120

Dye content: Min. 80.0%

$(C_7H_6Cl_2N_2O)_2 \cdot ZnCl_2$ MW 546.4

102415 50 mg
0°C [1919-91-1] 100 mg

Naphthol Free

500 mg

Substrate for assay of acid phosphatase by flow cytometry.

$C_{18}H_{15}BrNO_6P$ MW 452.2 1 g

CATALOG
NUMBER

190867 **NAPHTHOL AS-BI PHOSPHATE** 50 mg
0°C [530-79-0] 100 mg
Sodium Salt 500 mg
C₁₈H₁₃BrNO₆PNa₂ MW 496.2 1 g
5 g

102411 **NAPHTHOL AS-CL PHOSPHATE** 1 g
0°C Naphthol Free 5 g
Substrate for histochemical location of acid and alkaline phosphatases 10 g
C₁₈H₁₅ClNO₆P MW 407.8

102416 **NAPHTHOL AS-MX PHOSPHATE** 100 mg
0°C [1596-56-1] 500 mg
Naphthol Free 1 g
Free Acid
Crystalline
Substrate for the histochemical location of phosphatases.
C₁₉H₁₈NO₅P MW 371.3

102417 **NAPHTHOL AS-PHOSPHATE** 100 mg
0°C [13989-98-5] 250 mg
(2-Hydroxy-3-naphthoic acid anilide phosphate) 500 mg
Naphthol Free 1 g
Crystalline
Substrate for the histochemical location of phosphatases.
C₁₇H₁₄NO₅P MW 343.3

NAPHTHOL AS-PHOSPHATE/FAST RED VIOLET LB SYSTEM

An alkaline phosphatase stain system similar to the Naphthol AS-Phosphate/New Fuchsin Stain System which cannot be used for permanent records. This is a 3 component system- buffered naphthol AS-phosphate concentrate, fast red violet LB and sodium nitrite. Diluted working quantities are included.

980861 250 ml
980862 1 liter

NAPHTHOL AS-PHOSPHATE/NEW FUCHSIN SYSTEM

An alkaline phosphatase stain system which forms an alcohol insoluble red dye. This is a 3 component system- buffered naphthol AS-phosphate concentrate, new fuchsin and sodium nitrite. Diluted working quantities are included.

980851 250 ml
980852 1 liter

102414 **NAPHTHOL AS-TR PHOSPHATE** 100 mg
0°C [2616-72-0] 500 mg
(3-[2-Methyl-4-chlorophenylcarbonyl]-2-naphthylphosphate) 1 g
Naphthol Free
Free Acid
Crystalline
Off-white crystals
C₁₈H₁₅ClNO₅P MW 391.7

CATALOG
NUMBER

193999 **p-NITRO BLUE TETRAZOLIUM** 50 mg
0-5°C [298-83-9] 250 mg
(3,3'-(3,3'-Dimethoxy-4,4'-biphenylene)-bis-(2-p-nitrophenyl)-5-(phenyl)-2H-tetrazolium chloride) 1 g
Molecular Biology Reagent
Ideal for alkaline phosphatase conjugate detection in nucleic acid probe detection systems.
C₄₀H₃₀Cl₂N₁₀O₆ MW 817.6

p-NITROBLUE TETRAZOLIUM LIQUID SUBSTRATE (NBT)

Stabilized Substrate

Ideal, ready-to-use solution for in analyte detection systems utilizing dehydrogenase enzyme chemistry. Concentration: 0.489 mmol/liter.

980791 100 ml
980792 500 ml

194594 **p-NITROPHENYL PHOSPHATE** 250 mg
0°C [4264-83-9] 500 mg
Cell Culture Reagent
Disodium Salt 1 g
Hexahydrate 5 g
Purity: 99+%
White to pale yellow crystals
Free p-nitrophenol <0.005%
Suitable for use as a substrate for alkaline and acid phosphatase.
C₆H₄NO₆PNa₂ • 6H₂O MW 371

151766 **p-NITROPHENYL PHOSPHATE** 1 g
0°C [68189-42-4] 5 g
Di(Tris) Salt 25 g
Crystalline 100 g
Purity: 98+%
Substrate for assay of alkaline phosphatase.
C₁₄H₂₈N₃O₁₂P MW 461.4

193556 **p-NITROPHENYL PHOSPHATE** 6 tablets
0°C (pNPP Alkaline Phosphatase Substrate) 60 tablets
Two tablets when dissolved in 1 ml deionized water makes a ready-to-use buffered solution of pNPP.
Each tablet contains 5.0 mg.

980701 **p-NITROPHENYL PHOSPHATE POWDER** 6 vials
0-5°C (PNPP)
Ideal as a soluble substrate for alkaline phosphatase. The yellow color of the released nitrophenol can be measured at 405 nm.
Each vial contains 100 mg.

p-NITROPHENYL PHOSPHATE LIQUID CONCENTRATE (PNPP)

50X Stabilized Concentrate

Ready-to-use solution.

Excellent for alkaline phosphatase ELISA assays. Concentration: 0.19 M. Use with DEA or AMP Liquid Buffer.

980821 10 ml
980822 100 ml

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CATALOG
NUMBER

	p-NITROPHENYL PHOSPHATE LIQUID SUBSTRATE (PNPP) Stabilized Substrate Ready-to-use solution. Excellent for alkaline phosphatase ELISA assays. Supplied buffered in DEA. Concentration: 0.352 mmol/liter.	
980811		100 ml
980812		500 ml

Peroxidase Substrates

195039 RT	3-AMINO-9-ETHYLCARBAZOLE [132-32-1] Peroxidase indicator Ref.: (1) Anal. Biochem., 56 , 353 (1973). (2) Amer. J. Clin. Pathol., 63 , 451 (1975). C ₁₄ H ₁₄ N ₂ MW 210.3	10 g 50 g 100 g
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821811 RT	3-AMINO-9-ETHYLCARBAZOLE STABILIZED CONCENTRATE (AEC) 50X Liquid Concentrate · Safe · Convenient · Simple A precipitable peroxidase substrate for immunoblotting and immunohistochemical staining techniques. AEC produces an alcohol soluble red end product. In immunohistology, aqueous mounting media and counterstains must be used. For use with 10X AEC Buffer. Supplied as 0.095 M.	10 ml
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821813 RT	3-AMINO-9-ETHYLCARBAZOLE STABILIZED CONCENTRATE BUFFER (AEC Buffer) 10X Liquid Concentrate Buffer For use with AEC Stabilized Concentrate for immunoblotting and immunohistochemical staining techniques. AEC produces an alcohol soluble red end product. In immunohistology, aqueous mounting media and counterstains must be used.	50 ml
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154770 0-5°C	5-AMINOSALICYLIC ACID [89-57-6] (5-Amino-2-hydroxybenzoic acid) Purity: 99% Off-white to gray powder. C ₇ H ₇ NO ₃ MW 153.1	25 g 100 g
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195023 0-5°C	2,2'-AZINO-bis-(3-ETHYL-BENZTHIAZOLINE-6-SULFONIC ACID) [30931-67-0] (ABTS) Diammonium Salt Chromogenic substrate for sensitive peroxidase assays. C ₁₈ H ₁₈ N ₄ O ₆ S ₄ · (NH ₃) ₂ MW 548.7	1 g 5 g
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CATALOG
NUMBER

	2,2'-AZINO-bis-(3-ETHYL-BENZTHIAZOLINE-6-SULFONIC ACID SOLUTION) (ABTS) Stabilized Liquid Substrate A safe, convenient and good overall performing substrate for ELISA. It may be used for both kinetic and endpoint reactions. Supplied ready-to-use at 1.46 mmol/liter.	
821809		100 ml
821810		1 liter

150629 0°C	4-CHLORO-1-NAPHTHOL [604-44-4] Purity: 97% Off-white to tan crystals Jarrell, K.F., et al., <i>Molecular Microbiology</i> , 20 (3), 657 (1996). C ₁₀ H ₇ ClO MW 178.6	2 g 5 g 25 g 100 g
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152347 0-5°C	4-CHLORO-1-NAPHTHOL STABILIZED CHROMOGEN Chromogen solution for immunohistology procedures and peroxidase and pseudo-peroxidase reactions. Ready-to-use directly as the final step in developing the color indicator in the enzyme reaction. Precipitates as a readily detected marker for immunohistopathological staining. Stable up to 15 months.	50 ml 100 ml
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	4-CHLORO-1-NAPHTHOL STABILIZED CHROMOGEN Ready-To-Use solution suitable for immunohistology procedures, peroxidase reactions, and pseudo-peroxidase reactions. It precipitates as a readily detected marker for immunohistopathological staining.	
980611		50 ml
980612		100 ml

150825 0°C	3,3'-DIAMINOBENZIDINE [7411-49-6] (DAB) Tetrahydrochloride Color: white to pink Reagent used in colorimetric analysis of Se and other metals. Ref.: Anal. Chem., 30 , 1370 (1958). C ₁₂ H ₁₄ N ₄ · 4HCl MW 360.1	1 g 5 g 10 g
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150826 0°C	3,3'-DIAMINOBENZIDINE [7411-49-6] (DAB) Tetrahydrochloride Available in Ready-to-Use preweighed serum vials. Buffer may be directly injected with a hypodermic syringe without exposing the contents of the vial to the atmosphere. C ₁₂ H ₁₄ N ₄ · 4HCl MW 360.1	25 mg 100 mg
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980551 -20°C	3,3'-DIAMINOBENZIDINE (DAB) Powder Concentration: 0.6 mg/ml	6 vials
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980681 0°C	3,3'-DIAMINOBENZIDINE TABLETS (DAB) Tetrahydrochloride Each tablet contains 5 mg.	100 tabs.
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Immunobiologicals

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	3,3'-DIAMINOBENZIDINE (DAB)	
	STABLE SUBSTRATE SOLUTION KIT (DAB Solution)	
	• Ready-to-Use • Safer Handling • Convenient • Improves Efficiency.	
980571	For immunoblotting and immunohistochemical techniques.	300 ml
980572		800 ml

	3,3'-DIAMINOBENZIDINE LIQUID CONCENTRATE (DAB)	
	50X Stabilized Liquid Concentrate	
	This substrate is widely used for both immunoblotting and immunohistochemical staining techniques. It produces an insoluble end product which is brown and not alcohol soluble. DAB is a suspected carcinogen. Supplied as 0.0694 M and use with DAB Concentrate Buffer.	
821815		10 ml
821816		100 ml

	3,3'-DIAMINOBENZIDINE LIQUID CONCENTRATE BUFFER (DAB Buffer)	
	10X Liquid Concentrate Buffer	
	For use with DAB Liquid Concentrate for both immunoblotting and immunohistochemical staining techniques. It produces an insoluble end product which is brown and not alcohol soluble.	
821817		50 ml
821818		500 ml

980561	3,3'-DIAMINOBENZIDINE (DAB)	1 kit	145.00
-20-0°C	METAL ENHANCED KIT		
	The metal ions allow a far more dense stain forming a localized deep blue black precipitate.		

151827	o-PHENYLENEDIAMINE	10 g
0-5°C	[95-54-5]	25 g
	(1,2-Benzenediamine)	50 g
	Grade I	100 g
	Free Base	
	This product is a white to off-white solid which may darken during storage.	
	C ₆ H ₈ N ₂ MW 108.1	

195379	o-PHENYLENEDIAMINE	10 g
0°C	[615-28-1]	25 g
	Dihydrochloride	50 g
	Purity: 99+%	100 g
	C ₆ H ₈ N ₂ • 2HCl MW 181.1	

159520	o-PHENYLENEDIAMINE DIHYDROCHLORIDE TABLETS	10 tab.
0-5°C	[615-28-1]	50 tab.
	(OPD Tablets)	100 tab.
	Peroxidase substrate for EIA procedures.	
	Concentration: 13 mg/tablet.	
	Unit Definition: One tablet will stabilize 50ml of 0.1M Phosphate Buffer Solution.	
	Clear solubility in water with pH 4.3-4.5 at 25°C.	
	MW 181.1	

CATALOG NUMBER

190277	3,3',5,5'-TETRAMETHYLBENZIDINE	100 mg
RT	[54827-17-7]	1 g
	Crystalline	5 g
	Purity: 99+%	
	Reported to be a noncarcinogenic ¹ analog of benzidine; useful in gel staining procedure for low levels of heme-associated peroxidases ² and for enzyme immunoassay of horseradish peroxidase ³ .	
	Ref.: (1) Holland, V.R., et al., <i>Tetrahedron</i> , 30 , 3299 (1976); (2) <i>Anal. Biochem.</i> , 75 , 168 (1976); (3) Bos, E.E., et al., <i>J. Immunoassay</i> , 2 , 187 (1983).	
	C ₁₆ H ₂₀ N ₂ MW 240.3	

152116	3,3',5,5'-TETRAMETHYLBENZIDINE	100 mg
RT	[64285-73-0]	1 g
	Dihydrochloride	5 g
	Dihydrate	
	Purity: 97%	
	Water soluble form of TMB for determination of peroxidase.	
	Ref.: <i>Anal. Biochem.</i> , 98 , 388 (1979).	
	C ₁₆ H ₂₀ N ₂ • 2HCl • 2H ₂ O MW 349.3	

	3,3',5,5'-TETRAMETHYLBENZIDINE [54827-17-7]	
	(TMB Solution)	
	ELISA Grade	
	Stabilized Chromogen	
	This product has been found to perform superior to 5-aminosalicylic acid, 2,2'-azino-di(3-ethylbenzthiazolinesulfonate), and o-phenylenediamine.	
980601		50 ml
980602		100 ml

	3,3',5,5'-TETRAMETHYLBENZIDINE (TMB Powder)	
	This product is excellent for ELISA procedures.	
	C ₁₆ H ₂₀ N ₂ MW 240.3	
980502		10x100mg
980501		5 g

152346	3,3',5,5'-TETRAMETHYLBENZIDINE LIQUID SUB-	50 ml
RT	STRATE	100 ml
	• Ready-to-Use	1 liter
	• Convenient	
	• Reproducible Results	
	• Consistent Performance and Sensitivity	
	Stabilized chromogen solution, 1.25 mmol/liter, for ELISA procedures and peroxidase and pseudo-peroxidase reactions.	
	Stable up to 15 months, insensitive to exposure to light.	

196025	3,3',5,5'-TETRAMETHYLBENZIDINE LIQUID SUB-	100 ml
RT	STRATE	1 liter
	• Ready-to-Use	
	• Convenient	
	• Reproducible Results	
	• Consistent Performance and Sensitivity	
	For Manual Assays	
	Stabilized chromogen solution, 1.56 mmol/liter, peroxidase substrate.	
	Stable up to 15 months, insensitive to exposure to light.	

CATALOG
NUMBER

Chemiluminescence Substrates

194084
0°C
AEQUORIN
[50934-79-7]
From Jellyfish (*Aequorea sp.*)
Purified powder
A bioluminescent protein used in immunoassay procedures. It is reported to measure calcium serum and subcellular organelle levels less than 10 μM.
Ref.: Izutsu, K.T. and Felton, S.P., Clin. Chem., 18, 77 (1972).

1 mg
5 mg

STAR-GLO™ CHEMILUMINESCENT SUBSTRATE

Peroxidase substrate system

Each system contains equal volumes of solutions A and B for enhanced chemiluminescent detection in immunoblotting procedures involving peroxidase.

980901 60 ml
980903 240 ml

Other Substrates and Related Products

193913
-20°C
5-BROMO-4-CHLORO-3-INDOLYL-N-ACETYL-β-D-GLUCOSAMINIDE
[4264-82-8]
(5-Bromo-4-chloro-3-indolyl-2-acetamido-2-deoxy-β-D-glucopyranoside; X-GlcNAc)
Purity: 98%
N-Acetylglucosaminidase histochemical substrate that releases an insoluble blue chromophore after enzymatic action.
Protect from light and humidity.
C₁₆H₁₈BrClN₂O₆ MW 449.7

5 mg
25 mg

193921
-20°C
5-BROMO-4-CHLORO-3-INDOLYL-α-D-GALACTOPYRANOSIDE
[107021-38-5]
(5-Bromo-4-chloro-3-indolyl-α-D-galactoside; X-α-D-Galactoside)
Purity: ≥98%
An α-galactoside substrate which differentiates α-galactosidase positive yeast strains or bacteria.
Protect from light and humidity.
C₁₄H₁₅BrClNO₆ MW 408.6

5 mg
25 mg
100 mg

194811
0°C
5-BROMO-4-CHLORO-3-INDOLYL-β-D-GALACTOPYRANOSIDE
[7240-90-6]
(X-Gal; 5-Bromo-4-chloro-3-indolyl-β-D-galactoside)
Molecular Biology Reagent
Purity: ≥98%
Used as indigogenic substrate for β-galactosidase, for detection of β-galactosidase-positive clones, and the identification of lac and bacterial colonies or phage plaques.
C₁₄H₁₅BrClNO₆ MW 408.6

10 mg
100 mg
500 mg

CATALOG
NUMBER

193922
-20°C
5-BROMO-6-CHLORO-3-INDOLYL-β-D-GALACTOPYRANOSIDE
(5-Bromo-6-chloro-3-indolyl-β-D-galactoside; Magenta-GAL)
Purity: ≥98%
A chromogenic substrate for β-D-galactosidase and an alternative to X-GAL which produces an insoluble magenta chromophore in lac⁺ bacterial colonies. It may be used in histochemistry for enzyme activity localization in mammalian tissues.
Protect from light and humidity.
C₁₄H₁₅BrClNO₆ MW 408.6

25 mg
100 mg
500 mg

193923
-20°C
5-BROMO-4-CHLORO-3-INDOLYL-β-D-GLUCOPYRANOSIDE
[15548-60-4]
(5-Bromo-4-chloro-3-indolyl-β-D-glucoside; X-Glc; X-Glucoside)
Purity: ~98%
A β-D-glucosidase substrate which renders an insoluble indigo-blue chromophore (615 nm) upon enzymatic action. For histochemistry procedures, it acts as an indicator probe and detects β-glucosidase positive organisms in cell culture.
Protect from light and humidity.
C₁₄H₁₅BrClNO₆ MW 408.6

1 mg
5 mg
25 mg
100 mg

194812
-20°C
5-BROMO-4-CHLORO-3-INDOLYL-β-D-GLUCURONIDE
[18656-96-7]
(X-GlcA; X-Glucuro)
Molecular Biology Reagent
Cyclohexylammonium Salt
Purity: ≥98%
A β-glucuronidase substrate which forms an intense blue precipitate upon enzymatic action. Used for the detection of the GUS gene in bacterial colonies and in histochemical applications.
Protect from light and humidity.
C₁₄H₁₃BrClNO₇ • C₆H₁₃N MW 521.8

10 mg
25 mg
100 mg

194813
-20°C
5-BROMO-4-CHLORO-3-INDOLYL-β-D-GLUCURONIDE
[129541-41-9]
(X-GlcA; X-Glucuro)
Molecular Biology Reagent
Sodium Salt
Purity: ≥98%
A β-glucuronidase substrate which forms an intense blue precipitate upon enzymatic action. Used for the detection of the GUS gene in bacterial colonies and in histochemical applications.
Protect from light and humidity.
C₁₄H₁₃BrClNO₇Na MW 444.6

10 mg
25 mg
100 mg

980741
RT
COBALT SULFATE SOLUTION
Concentration: 2% w/v
Specially prepared for intensification of DAB on tissue sections and blots.

100 ml

980751
RT
COPPER CHLORIDE SOLUTION
Concentration: 1% w/v
Specially prepared for intensification of DAB on tissue sections and blots.

100 ml

Immunobiologicals

CATALOG NUMBER

821823 **4-METHYLUMBELLIFERYL PHOSPHATE LIQUID SUB-** 100 ml
 0-5°C **STRATE**
 (MUP)
Stabilized Liquid Substrate
 A ready-to-use, sensitive fluorogenic substrate for alkaline phosphatase procedures.
 Concentration: 0.6 mmol/liter.

980731 **NICKEL SULFATE SOLUTION** 100 ml
 RT **Concentration: 2% w/v**
 Specially prepared for intensification of DAB on tissue sections and blots.

PHENOLPHTHALEIN MONOPHOSPHATE LIQUID SUBSTRATE
 (PMP)
Stabilized Substrate
 Ready-to-use solution.
 For use in alkaline phosphatase systems for quantitative analysis procedures. Concentration: 1.68 mmol/liter.

980801 100 ml
 980802 500 ml

980761 **SILVER METHENAMINE SOLUTION** 100 ml
 0-5°C **Concentration: 4% w/v**
 Specially prepared for intensification of DAB on tissue sections and blots.

Biological Buffers

ANTIBODY DILUENT, Normal
 Ready-to-use diluent for primary antibodies and secondary antibodies. Antibodies diluted in this reagent can be stored between 4-8°C for up to 18 months.

980641 125 ml
 980642 500 ml
 980643 1 liter

ENZYME LABEL DILUENT
 Ready-to-use diluent for enzyme labeled antibodies and streptavidin/avidin enzyme conjugates. Subjected to 0.2 micron filtration. Diluted reagents can be stored between 4-8°C for up to 18 months.

980651 125 ml
 980652 500 ml
 980653 1 liter

193996 **GLYCEROL** 100 ml
 RT [56-81-5] 500 ml
Molecular Biology Reagent
Purity: 99+%
 Heavy metals (Pb): <5 ppm
 No detectable DNase, RNase, or protease.
 Prevents back-diffusion and protein samples into the buffer.
 $C_3H_8O_3$ MW 92.09

CATALOG NUMBER

GOLD LABEL DILUENT
 Ready-to-use diluent for gold labeled antibodies formulated to maximize stability and minimize background. Subjected to 0.2 micron filtration. Diluted reagents can be stored between 4-8°C for up to 18 months.

980661 125 ml
 980662 500 ml

194827 **HEPES** 25 g
 RT [7365-45-9] 100 g
 (N-2-Hydroxyethylpiperazine-N'-2-ethanesulfonic acid) 500 g
Molecular Biology Reagent
Purity: 99+%
Free Acid
 Zwitterionic Buffer useful in the pH range 6.8-8.2.
 $pK_a = 7.55$ at 25°C
 $C_8H_{18}N_2O_4S$ MW 238.3

194828 **HEPES** 25 g
 RT [75277-39-3] 100 g
Molecular Biology Reagent
Purity: 99+%
Sodium Salt
 $pK_a = 7.55$ at 25°C
 $C_8H_{17}N_2O_4SNa$ MW 260.3

HEPES BUFFER
 1M solution
Cell Culture Grade
 $pH = 7.2$ to 7.4 at 37°C
 Storage temperature: 15-30°C

1688446 20 ml
 1688449 100 ml

194835 **MES** 10 g
 RT [4432-31-9] 25 g
 (2-[N-Morpholino]ethanesulfonic acid) 100 g
Molecular Biology Reagent
Free Acid
Purity: ≥99%
 Zwitterionic buffers
 $pK_a = 6.15$ at 25°C
 $C_6H_{13}NO_4S \cdot H_2O$ MW 213.2

194837 **MOPS** 25 g
 RT [1132-61-2] 100 g
 (3-[N-Morpholino]propanesulfonic acid) 500 g
Molecular Biology Reagent
Purity: 99+%
Free Acid
 Useful buffer range: 6.5-7.9
 $C_7H_{15}NO_4S$ MW 209.3

CATALOG
NUMBER

PHOSPHATE BUFFERED SALINE TABLETS (PBS Tablets) Without calcium and magnesium 1 Tablet = 100 ml	
2810305	100 tabs.
2810306	200 tabs.
2810307	500 tabs.

PHOSPHATE BUFFERED SALINE (1X PBS Liquid) Dulbecco's Formula Without calcium and magnesium Storage temperature: 15-30°C	
1860449	100 ml
1860454	500 ml

PHOSPHATE BUFFERED SALINE (1X PBS Liquid) Dulbecco's Formula Storage temperature: 15-30°C	
1860049	100 ml
1860054	500 ml

TRICINE [5704-04-1] (N-Tris-[hydroxymethyl]methylglycine) Biological buffer pKa at 25°C = 8.1 Buffering pH range 7.4-8.8 C ₆ H ₁₃ NO ₅ MW 179.2	
103112	25 g
RT	100 g
	250 g
	1 kg

TRIS, ULTRA PURE [77-86-1] Purity: 99.9% Heavy metals (as Pb): <5 ppm O.D. (260mm) of a 5% saturated solution: <0.1 pKa at 20°C = 8.1 Biological buffer reagent. NH ₂ C(CH ₂ OH) ₃ MW 121.1	
819620	500 g
819623	1 kg
819638	5 kg

TRIS [1185-53-1] Hydrochloride Crystalline Purity: ≥99% C ₄ H ₁₁ NO ₃ · HCl MW 157.6	
103130	100 g
RT	250 g
	500 g
	1 kg
	5 kg

CATALOG
NUMBER

Purification Reagents

Protein A and Conjugates

Protein A is a single polypeptide chain of 42 kDa prepared from Cowan I strain of *Staphylococcus aureus*. It is characterized by its ability to bind directly to the Fc portion of immunoglobulins of many animal species. Typically, this binding occurs in less than 30 minutes without interruption from EDTA or detergent. In addition, binding to the Fc portion does not affect binding of the Fab site.

PROTEIN A From <i>S. aureus</i> , Cowan I Bacterial Adsorbent This product will bind the Fc portion of immunoglobulin of many different animal species. Antibody binding is achieved in less than 30 minutes at a temperature range of 4°-37°C. Lyophilized See the Immunobiologicals section for further details.	
797001	10 ml
797002	5x50ml

PROTEIN A From <i>S. aureus</i> , Cowan I This protein has been used as a lymphocytic mitogen and has been shown to stimulate polyclonal antibody secretion from human B cells. Typically, 1 mg of Protein A will bind 8-12 mg of human IgG.	
797051	5 mg
0-5°C	

PROTEIN A From <i>S. aureus</i> , Cowan I Recombinant Lyophilized, salt-free Purity: 98% The specific activity of this product is equal to the most active Protein A preparations from <i>S. aureus</i> .	
987051	5 mg
0-5°C	

PROTEIN A Salt-free lyophilized powder. Tested for binding to human IgG using radial immunodiffusion.	
55832	2 mg
0-5°C	

Protein A Conjugates

These conjugates may be used to replace secondary antibodies in many different studies. Protein A-FITC conjugates are produced by a modified Goding procedure. Typical dilution is 1:50-1:200 with PBS. Protein A-AP conjugates are produced using highly purified alkaline phosphatase of bovine origin. The dilution is typically 1:1250 for blotting and 1:2000 ELISA. Protein A-HRP conjugates are supplied in a stabilizing solution and the dilution range is typically 1:1500-1:5000. It is recommended that dilutions be calculated for each particular method by the researcher.

PROTEIN A-ALKALINE PHOSPHATASE From Calf Intestinal Alkaline Phosphatase This product is used to replace labeled second antibodies in many immunological studies. Working dilution is: 1:1250 for immunoblotting, 1:2500 for ELISA.	
622821	3 mg
0-5°C	

Immunobiologicals

CATALOG NUMBER

55965 **PROTEIN A-ALKALINE PHOSPHATASE** 2 mg
 0-5°C (Protein A-AP)
 Lyophilized from 0.05M Tris, 0.14M sodium chloride, pH 7.5, with 0.001M magnesium chloride, 1% ovalbumin, and 0.05% sodium azide. Tested for ELISA titer on purified rabbit IgG.

622801 **PROTEIN A-FITC** 5 mg
 0-5°C This product may be used to replace labeled second antibodies in many immunological studies. It is produced by a modified procedure of Goding. The typical dilution is 1:50-1:200 with PBS.

55881 **PROTEIN A-FITC** 2 mg
 0-5°C Liquid in 0.02M PBS, pH 7.3, with 1% BSA, 10% glycerol and 0.05% sodium azide. Tested for appropriate fluorochrome-to-protein ratio and immunofluorescence on purified rabbit IgG.

622811 **PROTEIN A-HORSERADISH PEROXIDASE** 2 ml
 0-5°C This product may be used to replace labeled second antibodies in many immunological studies. The typical dilution is 1:1500-1:2500 for immunoblotting, 1:3000-1:5000 for ELISA.

55901 **PROTEIN A-HRP** 2 mg
 0-5°C Liquid in 0.01M sodium phosphate, 0.15 M sodium chloride, pH 7.4, with 1% ovalbumin, 40% glycerol, and 0.1% proclin.

678741 **PROTEIN A-BIOTIN** 1 mg
 0-5°C

PROTEIN A-COLLOIDAL GOLD
Colloidal Gold Conjugated
Particle Size: 5 nm
 Applications: Electron Microscopy

678621 0.25 ml
678622 1 ml

PROTEIN A-COLLOIDAL GOLD
Colloidal Gold Conjugated
Particle Size: 10 nm
 Applications: Electron Microscopy

678631 0.25 ml
678632 1 ml

PROTEIN A-COLLOIDAL GOLD
Colloidal Gold Conjugated
Particle Size: 20 nm
 Applications: Electron Microscopy

678641 0.25 ml
678642 1 ml

CATALOG NUMBER

68049 **PROTEIN A, [¹²⁵I]** 100µCi
 0-5°C **Immunological Grade** 250µCi
 Sp. Act. 2-10 µCi/µg
 74-370 kBq/µg
 0.1 M Potassium phosphate pH 7.5:
 ethanol (1:1) with 0.5% BSA.

797011 **PROTEIN A-AGAROSE** 5 ml
 0-5°C 5 atoms hydrophilic spacer arm; contains 1.2-1.5 mg of Protein A per ml gel.
Capacity: approx. 12-15 mg human IgG bound per ml gel.
 Suspension in PBS containing 0.02% sodium azide.
Applications: purification of some IgG molecules.

Protein G

Similar to Protein A in function, Protein G binds to the Fc region of many immunoglobulin G and is primarily used to detect, quantify and purify IgG antibodies and antigen-antibody complexes. It features two IgG binding domains and the highly charged C region. This region contains 10 lysine residues not involved in binding, and therefore, provides a convenient target for protein conjugation.

672651 **PROTEIN G** 1 mg
 -20-0°C **Recombinant**
 Streptococcal origin. Contains two IgG-binding B regions, binds both Fc and Fab fragments of IgG. Does not cross-react with human albumin. Essentially salt-free lyophilized powder. Freely soluble in water and standard buffers. pH stability: 2-10

622661 **PROTEIN G-BIOTIN** 1 mg
 0-5°C This product is the same as ICN Code No. 67-265-1 that has been conjugated with biotin. It is useful in ELISA and immunohistochemical procedures.

PROTEIN G-COLLOIDAL GOLD
Colloidal Gold Conjugated
Particle Size: 5 nm
 Applications: Electron Microscopy

678651 0.25 ml
678652 1 ml

PROTEIN G-COLLOIDAL GOLD
Colloidal Gold Conjugated
Particle Size: 10 nm
 Applications: Electron Microscopy

678661 0.25 ml
678662 1 ml

PROTEIN G-COLLOIDAL GOLD
Colloidal Gold Conjugated
Particle Size: 20 nm
 Applications: Electron Microscopy

678671 0.25 ml
678672 1 ml

CATALOG
NUMBER

672681 **PROTEIN G-HRP** 1 ml
0-5°C Recombinant Protein G is conjugated with highly purified horseradish peroxidase. Product is supplied in enzyme conjugate stabilizer containing 0.05% methiolate as preservative.
Recommended Working Dilutions:
1:1000 to 1:3000 for ELISA
1:5000 for Western Blotting

68089 **PROTEIN G, [¹²⁵I]** 10µCi
0-5°C **Recombinant Grade** 50µCi
Sp. Act. 2-15 µCi/µg 100µCi
74-555 kBq/µg
0.1 M Potassium phosphate, pH 7.5, with 0.5% BSA: ethanol solution (1:1).

Antibody Affinity Gels

55978 **ANTIBODY AFFINITY GEL** 2 ml
0-5°C **Anti-β-Galactosidase**
Host: rabbit
A gel with covalently bound rabbit antibodies purified by protein A chromatography and repeatedly absorbed with immobilized lysate from β-gal *Escherichia coli* strains. This antibody portion has minimal cross-reactivity to other *E. coli* proteins in immunoblotting. It is intended for the identification, isolation and purification of β-galactosidase-containing fusion proteins. The column capacity is at least 2 mg β-galactosidase.

55259 **ANTIBODY AFFINITY GEL** 2 ml
0-5°C **Anti-Human IgG**
Host: goat (affinity purified)
A gel with covalently bound goat antibodies purified by protein A chromatography.
It is intended for the identification, isolation and purification of human IgG.

55581 **ANTIBODY AFFINITY GEL** 2 ml
0-5°C **Anti-Mouse IgG**
Host: goat (affinity purified)
A gel with covalently bound goat antibodies purified by protein A chromatography.
It is intended for the identification, isolation and purification of mouse IgG.

55696 **ANTIBODY AFFINITY GEL** 2 ml
0-5°C **Anti-Rabbit IgG**
Host: goat (affinity purified)
A gel with covalently bound goat antibodies purified by protein A chromatography.
It is intended for the identification, isolation and purification of rabbit IgG.

55786 **ANTIBODY AFFINITY GEL** 2 ml
0-5°C **Anti-Rat IgG**
Host: goat (affinity purified)
A gel with covalently bound goat antibodies purified by protein A chromatography.
It is intended for the identification, isolation and purification of rat IgG.

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A world of biomedical products

CATALOG
NUMBER

Other Reagents

Coombs' Reagents

The antiglobulin (Coombs') test has been widely employed for the diagnosis of autoimmune hemolytic anemia (AIHA). Additionally, positive test results are found in systemic lupus erythematosus and other immunological disorders. The laboratory methods for diagnosis of AIHA are simple immunohematologic procedures that can be readily preformed in most labs.

646352 **COOMBS' TEST** 1 ml
0-5°C **POLYCLONAL ANTIBODY**
Anti-Canine Globulins- IgG, IgM, C3
Host: rabbit
Form: lyophilized antiserum
Applications: Autoimmune Hemolytic Anemia (AIHA) diagnosis

646371 **COOMBS' TEST** 2 ml
0-5°C **POLYCLONAL ANTIBODY**
Anti-Equine Globulins- IgG, C3
Host: rabbit
Form: lyophilized antiserum
Applications: Autoimmuno Hemolytic Anemia (AIHA) diagnosis
Antibody-coated red blood cells resulting from AIHA are phagocytized by cells in the liver and spleen or lysed in the presence of complement resulting in a severe anemia. This antibody may also be used in the isoerythrolysis test in foals which is a severe hemolytic condition involving immunologically mediated lysis of red blood cells. It can also be applied in cross-matching applications to detect incomplete IgG antibodies to red blood cell antigen prior to transfusion.

646381 **COOMBS' TEST** 2 ml
0-5°C **POLYCLONAL ANTIBODY**
Anti-Feline Globulins- IgG, C3
Host: rabbit
Form: lyophilized antiserum
Applications: Autoimmune Hemolytic Anemia (AIHA) diagnosis

To place an order: (800) 854-0530 fax (800) 334-6999
Outside the U.S.: (714) 545-0100 fax (714) 557-4872

CATALOG
NUMBER

Freund's Adjuvants

642851 **FREUND'S ADJUVANT** 50 ml
0-5°C **Complete**
This product is made by a modification of Freund's technique, in which 25 mg of *Mycobacterium* is suspended in a mixture of 7.5 ml Arlacel A and 42.5 ml paraffin oil.

642861 **FREUND'S ADJUVANT** 50 ml
0-5°C **Incomplete**
This product is made without *Mycobacterium* and contains 7.5 ml Arlacel A and 42.5 ml paraffin oil.

55828 **FREUND'S COMPLETE ADJUVANT** 50 ml
0-5°C

55829 **FREUND'S INCOMPLETE ADJUVANT** 50 ml
0-5°C

Mounting and Embedding Media

11400 **FLUOROTEC** 25 ml
0-5°C Embedding medium

11411 **FLUOROSTAB** 25 ml
0-5°C Embedding medium

622701 **MOUNTING MEDIUM,** 25 ml
0-5°C **IMMUNO-FLUORE™**
This medium is designed for immunofluorescent preparations and is based on a solution of gelvatol with stabilizer to withstand prolonged exposure to ultraviolet light and to inhibit fading upon storage.

CATALOG
NUMBER

Miscellaneous Products

ACTIBIND K

A protein from a variant of *Streptococcal* protein L that binds kappa light chains and/or the F_{ab} portion of immunoglobulins of all types. It is also useful in the purification of monoclonal antibodies and F_{ab} antibody fragments. Also see Q-Actibind and S-Actibind.

797091 1 mg
797092 2 mg

823211 **ERYTHRO-LYSE™,** 1 kit
LEUKOCYTE PREPARATION KIT

Erythro-Lyse™ Leukocyte preparation kit gently lyses erythrocytes found in whole blood at physiological pH while maintaining intact populations of leukocytes, monocytes, and granulocytes allowing for easy separation through their light scattering characteristics. Unfixed cells are maintained viable which can be used in tissue culture if the lyse buffer and wash buffer are sterile filtered. It can be used with secondary reagents and secondary antibody conjugates.

GUINEA PIG COMPLEMENT

This product is suitable for serological applications. It is specially collected and processed under "Cold Room" conditions which maintains maximum complement activity.

Lyophilized, unfractionated serum.

Each vial is accompanied by an appropriate volume of diluent for reconstitution.

After reconstitution, store at -20°C.

642831 10x1 ml
642836 15 ml

620861 **KAPPABIND-AGAROSE** 1 ml
0-5°C KappaBind™ is immobilized on 4% cross-linked agarose media.

Particle Size: 50-160 microns.

This product exhibits low non-specific adsorption and allows for high degrees of purification of immunoglobulins using the KappaBind™ protein ligand. It is ideal for low pressure column chromatography for immunoglobulin purification.

CATALOG
NUMBER

685341 KAPPACHROM™ MEDIA 0.5 ml
0-5°C This is an antibody binding protein which binds to the kappa light chains of all antibody types. It has been covalently linked to HIPAC® media for efficient and complete purification of antibodies and antibody fragments from serum, ascites and cell culture supernatants, as well as, from microbial fermentation broth. By binding to the kappa light chains, KappaCrom™ does not interfere with the antigen binding site. It will not bind bovine immunoglobulins which may be present in culture extracts.

82080A LIPID CONTROL, LOW (LTC) 3 x 5 ml

642801 MOUSE COMPLEMENT 5 ml
0-5°C Collected from sexually mature mixed breed mixed sex mice. Complement activity is a uniform high hemolytic titer expressed as a ratio of CH50 units per milliliter of undiluted complement.
Lyophilized

234441 POLYETHYLENIMINE 500 ml
0-5°C [9002-98-6]
(Polymine P)
50% Aqueous Solution

113212 POLYINOSINATE-POLYCYTIDYLATE 10 mg
113219 1 g

71120V POLY-L-LYSINE HYDROBROMIDE 100 mg
0-5°C [25988-63-0]
MW 70,000

CATALOG
NUMBER

980631 PROTExIDASE 500 ml
0-5°C Peroxidase Protective Buffer which stabilizes HRP conjugates. It is compatible with all common blocking agents including Bovine Serum Albumin, skim milk powder, and TWEEN 20. Protexidase provides stability of the HRP enzyme and it also inhibits microbial growth. Supplied in ready-to-use form, Protexidase is recommended for extended storage of highly diluted horseradish peroxidase conjugates. It can be stored for up to one year at 2-8°C and allows for dilutions up to 1:16,000.

824571 RABBIT BRAIN ACETONE POWDER 5 g
824572 10 g
Premium grade acetone powder for a wide range of coagulation diagnostics.

642821 RABBIT COMPLEMENT TYPE (HLA-ABC) 1 ml
642822 5 ml
642823 10x5 ml
Collected from 8-12 weeks old rabbits. Cytotoxic titer is determined by NIH standards for microlymphocytotoxicity. Minimum release criteria is 80%-100% cell death in 1:2 dilution.

642812 RABBIT COMPLEMENT TYPE (HLA-DR) 5 ml
0-5°C Collected from 8-12 weeks old rabbits. Cytotoxic titer is determined by NIH standards for microlymphocytotoxicity. Minimum release criteria is 80%-100% cell death in 1:2 dilution.

685361 RHEUMATOID FACTOR REMOVAL REAGENT 5 ml
(RFRR)
This antibody reagent is designed to remove IgM class Rheumatoid factors (IgM-RF) from serum and plasma samples. The antibody is specific for IgG when tested against human plasma and human immunoglobulins.

233511 VIRAL DNA 10 U
0-5°C Lambda DNA