



Product Specifications

DNA & RNA Purification, Electrophoresis Reagents, Polymerase Chain Reaction
Custom Primers and Probes
Hybridization and Detection Reagents

RNase A Solution, DNase Free

	Catalog Number	Description	Size
<input type="checkbox"/>	40-5101-02	RNase A Molecular biology grade solution. DNase Free. 2 mg/ml; 200 µl	400 µg
<input type="checkbox"/>	40-5101-10	RNase A Molecular biology grade solution. DNase Free. 2 mg/ml; 1 ml	2 mg
<input type="checkbox"/>	40-5101-01	RNase A Molecular biology grade solution. DNase Free. 10 mg/ml; 1 ml	10 mg

Storage:

Shipped on ice. Store at -20°C.

Product Description:

RNase A is purified from bovine pancreas. RNase A is an endonuclease that specifically cleaves single-stranded RNA at 3' phosphate linkages of pyrimidine (uracil or cytosine) residues leaving pyrimidine 3' phosphates and RNA oligonucleotides with terminal pyrimidine 3' phosphates. This enzyme does not require co-factors and divalent cations for the activity and it does not hydrolyze DNA as DNA lacks 2'-OH groups essential for the formation of cyclic intermediates.

Supplied in ready to use solution of 2 mg/ml in 50mM Tris-HCl pH 7.4 and 50% glycerol; 4 µl is sufficient for routine RNase treatment to digest RNA in 1.5 ml plasmid mini preps. A high concentration solution of 10 mg/ml is also available.

Applications and Recommended Product Use:

RNase A applications include protocols to hydrolyze RNA to RNA oligonucleotides and is generally used in plasmid and genomic DNA purification protocols to eliminate carry over RNA. Specific applications include RNase protection assay to RNA sequence analysis.

Supplied in ready to use solution in 50% glycerol (50mM Tris-HCl pH 7.4 and 50% glycerol). 1 µl (30 units/µl) is sufficient for routine RNase treatment to digest RNA in 1.5 ml plasmid mini preps.

This preparation does not require the classic boiling of RNase A solution to inactivate DNase. Boiling is not recommended.

The enzyme is active under a wide range of reaction conditions. At low salt concentrations (0 to 100mM NaCl), RNase A cleaves single-stranded and double-stranded RNA as well the RNA strand in RNA-DNA hybrids. However, at NaCl concentrations of 0.3M or higher, RNase A specifically cleaves single-stranded RNA



RNase A Inhibitors. The most potent inhibitor is a ~50kDa protein from cytosol of mammalian cells, e.g. natural RNase inhibitor. Other inhibitors: uridine 2',3'-cyclic vanadate, 5'-diphosphoadenosine 3'-phosphate and 5'-diphosphoadenosine 2'-phosphate, SDS, diethyl pyrocarbonate, 4M guanidinium thiocyanate plus 0.1M 2mercaptoethanol and heavy metal ions.

RNase A activity survives boiling and thus complete inactivation is performed by phenol extraction, chaotropic salts, autoclaving of reagents and labware etc.

Specifications:

Enzyme Name:	RNase A
Source:	Bovine pancreas
EC Number:	3.1.27.5
Molecular Weight:	13,700 Da
Solution Form:	50mM Tris-HCl pH 7.4 and 50% glycerol
Concentration:	30 units/ μ l [approximately 6 mg/ml]
Unit Definition:	One Kunitz unit of RNase A is the amount of enzyme required to cause an increase in absorbance of 1.0 at 260 nm at 37°C (pH 5.0) when yeast rRNA is hydrolyzed to acid-soluble oligonucleotides. Fifty units are approximately equivalent to 1 Kunitz unit
Purity:	The enzyme is chromatographically purified and is tested for protease and DNase activities.
Quality Control Tests:	The absence of DNase and proteases confirmed by appropriate quality tests. Functionally tested for RNA digestion in a plasmid DNA purification procedure.

References:

1. SAMBROOK, J., RUSSELL, D. W. (2001) *Molecular Cloning: A Laboratory Manual*, the third edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, 7.63-7.74.
2. SHARMA, R. C., MURPHY A. J., DE WALD, M. G. AND SCHIMKE, R. T. (1993) *BioTechniques*, **14**, 176-178.
3. Ausubel, F.M., et al., *Current Protocols in Molecular Biology*, vol. 1, John Wiley & Sons, Inc., Brooklyn, New York, 3.13.1, 1994-2005.
4. Kunitz, M.A., A spectrophotometric method for the measurement of ribonuclease activity, *J. Biol. Chem.*, **164**, 563-568, 1946.



Ordering Information

Product	Catalog No.	Size	Price \$
RNase A solution, DNase Free. 2 mg/ml; 200 µl	40-5101-02	400 µg	\$15.00
RNase A solution, DNase Free. 2 mg/ml;; 1 ml	40-5101-10	2 mg	\$34.00
RNase A solution, DNase Free. 10 mg/ml; 1 ml	40-5101-01	10 mg	\$78.00
DNase I, RNase-free; 2u/µl	40-5111-05	500 units	\$55.00
Proteinase K; 10 mg/ml	40-5203-02	200 µl	\$15.00
Lytic Enzyme; 4000 units/ml	40-5205-02	200 µl	\$15.00
Glycogen Solution; 10 mg/ml	40-5112-02	200 µl	\$15.00

Related Products Ordering Information

PCR Kits & Reagents

Product	Catalog No.	Size	Price \$
Taq DNA Polymerase; 400 units; 5 µ/µl; 80 µl	40-5200-40	400 units	\$75.00
Taq PCR Kit; 200 x 50 µl reactions	40-5211-01	200 reactions	\$110.00
Taq PCR Kit with controls; 200 reactions	40-5212-01	200 reactions	\$125.00
PCR Master Mix (2X); 100 x 50 µl reactions (2 tubes x 1.3 ml)	40-5213-01	100 reactions	\$70.00
PCR Master Mix (2X); 200 x 50 µl reactions (4 tubes x 1.3 ml)	40-5213-02	200 reactions	\$120.00

PCR Reagents

Product	Catalog No.	Size	Price \$
Taq DNA Polymerase 300 units; 5 µ/µl; 60 µl	40-5200-30	300 units	\$60.00
PCR Buffer Standard (10 X)	40-3060-16	1.6 ml	\$8.00
PCR Buffer Mg Free (10 X)	40-3061-16	1.6 ml	\$8.00
Taq Polymerase Dilution Buffer; 1 ml	40-3070-10	1 ml	\$8.00
dNTP 2mM (10X)	40-3021-11	1.1 ml	\$15.00
MgCl ₂ ; 25 mM	40-3022-16	1.6 ml	\$8.00
Omni-Marker™ Universal Unlabeled	40-3005-01	100 µl	\$15.00
Primer and Template Mix; 500 bp; 40 reactions	40-2026-60PT	100 µl	\$15.00
Nuclease Free Water	40-3001-16	1.6 ml	\$5.00
DMSO	40-3031-10	1 ml	\$8.00
TMAC (Tetramethyl ammonium chloride) 100 mM	40-3053-10	1 ml	\$8.00
KCl 300 mM	40-3059-10	1 ml	\$8.00
Betaine; 5M	40-3032-10	1 ml	\$8.00

Prices subject to change without notice

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PATENTS/DISCLAIMER: Some applications in which this product can be used may be covered by patents issued and applicable in the United States and certain other countries. Because purchase of this product does not include a license to perform any patented application, users of this product may be required to obtain a patent license depending upon the particular application in which the product is used. The PCR process was the subject of United States patents that expired on March 29, 2005 and European Patent Nos. 201,184 and 200,262 that expired on March 28, 2006.



Related Products Ordering Information

Loading Buffers			
Product	Catalog No.	Size	Price \$
Gel Loading Buffer 5X BPB/XC non-denaturing	40-3002-10	1 ml	10.00
Gel Loading Buffer 5X BPB/XC non-denaturing	40-3002-15	15 ml	80.00
Gel Loading Buffer 10X BPB/XC non-denaturing	40-3003-10	1 ml	16.00
Gel Loading Buffer 10X BPB/XC non-denaturing	40-3003-15	15 ml	95.00
Gel Loading Buffer 5X Orange G/XC non-denaturing	40-3004-10	1 ml	10.00
Gel Loading Buffer 5X Orange G/XC non-denaturing	40-3004-15	15 ml	80.00
Gel Loading Buffer 2X BPB/XC Denaturing for Sequencing	40-5027-10	1 ml	10.00
Gel Loading Buffer 2X BPB/XC Denaturing for Sequencing	40-5027-15	15 ml	80.00
DNA SDS Gel Loading Buffer 5X BPB/XC DNA binding protein denaturing buffer	40-5028-10	1 ml	10.00
DNA SDS Gel Loading Buffer 5X BPB/XC DNA binding protein denaturing buffer	40-5028-15	15 ml	60.00
RNA Gel Loading Buffer 2X BPB/XC with ethidium bromide	40-5029-10	1 ml	36.00
RNA Gel Loading Buffer 2X BPB/XC with ethidium bromide	40-5029-15	15 ml	82.00
RNA Gel Loading Buffer 2X BPB/XC without ethidium bromide	40-5030-10	1 ml	26.00
RNA Gel Loading Buffer 2X BPB/XC without ethidium bromide	40-5030-15	15 ml	72.00

Related Products Ordering Information

Buffers & Reagents			
Product	Catalog No.	Size	Price \$
Agarose LE Molecular Biology Grade; 100 gms	40-3010-10	100 gms	120.00
Agarose LE Molecular Biology Grade; 500 gms	40-3010-50	500 gms	410.00
Agarose Tablets, 0.5 gm each	40-3011-10	100 tablets	100.00
TAE Buffer; 50 X Concentrate	40-3007-01	100 ml	32.00
TBE Buffer; 5 X Concentrate	40-3008-10	1000 ml	35.00
Hybwash A, Hybridization Wash Solution	40-5020-20	200 ml	65.00
Hybwash B, Hybridization Wash Solution	40-5021-10	100 ml	50.00
10x Washing buffer	40-5025-20	200 ml	125.00
10% Blocking solution	40-5026-10	100 ml	75.00
Seq. Loading buffer	40-5027-00	1 ml	10.00
10x AP Detection buffer	40-5031-10	100 ml	65.00
Lumisol™ I Hybridization Solution; contains formamide	40-5022-20	200 ml	75.00
Lumisol™ II Hybridization Solution; for non-toxic hybridizations	40-5023-20	200 ml	75.00
Lumisol™ III Hybridization Solution; for oligo probes	40-5024-20	200 ml	75.00

Omni-Marker™			
Product	Catalog No.	Size*	Price \$
Omni-Marker™ Universal unlabeled	40-3005-10	1 ml	90.00
Omni-Marker™ Low unlabeled	40-3006-10	1 ml	90.00
Omni-Marker™ GScan-2 Tamra labeled 50 bp - 600 bp	40-3062-05	500 µl	325.00

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