



PRODUCT INFORMATION

RNase I

Pub. No. MAN0012009

Rev. Date 09 January 2017 (Rev. B.00)

#_

Lot: _

Expiry Date: _

Store at -20 °C

Components	#EN0601	#EN0602
RNase I	10 U/μL 1000 U	10 U/μL 5000 U

www.thermofisher.com

For Research Use Only. Not for use in diagnostic procedures.

Description

RNase I, an endoribonuclease, preferentially hydrolyzes single-stranded RNA to nucleoside 3'-monophosphates via nucleoside 2', 3'-cyclic monophosphate intermediates (1). The enzyme does not require any metal ions for activity. This product is the periplasmic form of RNase I.

Applications

- Removal of RNA from DNA solutions (2).
- Removal of RNA from recombinant protein preparations.
- Ribonuclease protection assays (3).

Source

E.coli cells with a cloned *rna* gene of *E.coli*.

Definition of Activity Unit

One unit of the enzyme catalyzes degradation of 100 ng of *E.coli* ribosomal RNA per second into acid-soluble nucleotides at 37 °C.

Enzyme activity is assayed in the following mixture: 20 mM Tris-acetate (pH 8.0), 100 mM NaCl, 0.1 mM EDTA, 0.01% Triton X-100, 40 μg/mL *E.coli* ribosomal [³H]-RNA.

Storage Buffer

The enzyme is supplied in: 50 mM Tris-HCl (pH 8.0), 100 mM NaCl, 0.01% Triton X-100 and 50% (v/v) glycerol.

Inhibition and Inactivation

- Inhibitors: SDS at 0.1% concentration irreversibly inactivates the enzyme.
- Inactivated by heating at 100 °C for 30 min, reliably removed by spin column or phenol/chloroform extraction.

Note

- Mammalian ribonuclease inhibitors have no effect on RNase I.
- RNase I binds to DNA, but does not degrade it.
- RNase I amino acid sequence is typical for the RNase T2 family.
- Non-ionic detergents (e.g., Triton X-100) do not inhibit RNase I, and may even slightly stimulate its activity and stabilize it against heat inactivation. Triton X-100 or BSA (at 0.1 mg/mL) may prevent RNase I from sticking to glass vessels when working with dilute solutions.
- Polyamines stimulate the activity of RNase I.


CERTIFICATE OF ANALYSIS

Endodeoxyribonuclease Assay

No detectable degradation was observed after incubation of supercoiled plasmid DNA with RNase I.

Labeled Oligonucleotide (LO) Assay

No detectable degradation after incubation of single-stranded or double-stranded radiolabeled oligonucleotides with RNase I.

Quality authorized by:  Jurgita Zilinskiene

(continued on back page)

Reference

1. Shen, V., Schlessinger, D., RNase I of *Escherichia coli*, The Enzymes (Boyer, P.D., ed), Academic Press Inc., New York, vol. 15B, 503-506, 1982.
2. Zhu, L., Deutscher, M.P., The *Escherichia coli rna* gene encoding RNase I: sequence and unusual promoter structure, Gene, 119, 101-106, 1992.
3. Sambrook, J., Russell, D.W., Molecular Cloning: A Laboratory Manual, the third edition, Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, 2001.

LIMITED USE LABEL LICENSE: Internal Research and Development Use Only.

The purchase of this product conveys to the buyer the limited, non-exclusive, non-transferable right (without the right to resell, repackage, or further sublicense) to use this product for internal research and development purposes. No other license is granted to the buyer whether expressly, by implication, by estoppel or otherwise. In particular, the purchase of the product does not include or carry any right or license to use, develop, or otherwise exploit this product commercially and no rights are conveyed to the buyer to use the product or components of the product for purposes including but not limited to provision of services to a third party, generation of commercial databases or clinical diagnostics. This product is sold pursuant to authorization from Thermo Fisher Scientific and Thermo Fisher Scientific reserves all other rights. For information on purchasing a license for uses other than internal research and development purposes, please contact outlicensing@lifetech.com or Out Licensing, Life Technologies Inc., 5781 Van Allen Way, Carlsbad, California 92008.

PRODUCT USE LIMITATION

This product is developed, designed and sold exclusively *for research purposes and in vitro use only*. The product was not tested for use in diagnostics or for drug development, nor is it suitable for administration to humans or animals. Please refer to www.thermofisher.com for Material Safety Data Sheet of the product.

© 2016 Thermo Fisher Scientific Inc. All rights reserved. All trademarks are the property of Thermo Fisher Scientific Inc. and its subsidiaries.

