RNase T1 (Cloned)

Store at –20°C
Do not store in a frost-free freezer.

Catalog #:	AM2280	AM2282
Amount:	100,000 Units	500,000 Units

Product Description: A highly purified form of Ribonuclease T1, suitable for RNA mapping studies.

Source: An *E. coli* strain overexpressing the Ribonuclease T1 gene of *Aspergillus oryzae*.

Concentration: 1,000 U/µL

Unit Definition: 100 Units of RNase T1 is the amount of enzyme that yields an increase in absorption at 260 nm of 0.01428 units per min at room temperature using 60 µg/mL yeast total RNA as a substrate. One Unit measured using yeast RNA as substrate is equivalent to 1 Unit in the previous Ambion assay (25 Units of activity corresponds to a change of 0.01 A_{260} unit in 1 min at room temperature using GpA as substrate).

Materials Not Provided: Because of the variety of product applications, no reaction buffer is supplied.

Storage Conditions: Store at –20°C. ***Do not store in a frost-free freezer.***

Storage Buffer: (Not included) 10 mM HEPES (pH 7.2), 1 mM EDTA, 50% glycerol and 0.1% Triton.

USER INFORMATION

General Information:

RNase T1 (E.C. 3.1.27.3) is an 11 kD endonuclease that specifically cleaves RNA but not DNA. The enzyme hydrolyzes single-stranded RNA 3' of guanosine residues, producing 3'-phosphorylated mono- or oligoribonucleotides. RNase T1 is significantly more active than RNase A; RNase T1 requires only a 1:150 ratio of enzyme:substrate to achieve complete digestion of RNA, while RNase A requires a ratio of 1:20.

RNase T1 has optimum activity at pH 7.5, with reduction to 50% activity at pH 5.5 and 8.0. Irreversible inactivation of RNase T1 has been reported above pH 9.

RNase T1 remains fully active after boiling for 10 min, exposure to 8 M urea for 28 hr at room temperature, phenol treatment, or upon precipitation with alcohols or acetone. It is resistant to heparin and placental ribonuclease inhibitor, both routinely used as inhibitors of RNase A.

RNase T1 is inhibited by heavy metals such as Mn^{++}, Zn^{++}, Cu^{++} and Hg^{++}. For optimal activity, EDTA should be included in the digestion buffer.

Applications:

RNase TI can be used in RNase Protection Assays using the reagents included in the Ambion RPA III™ Kit (Cat #AM1414, AM1415). See Ambion Technical Bulletin #152, "Choice of Ribonucleases for a Ribonuclease Protection Assay." It is usually used in conjunction with RNase A, but can be used alone to prevent cleavage in A-U rich regions of the probe/sample hybrid. See the Instruction Manual for the RPA III Kit for more information:
www.ambion.com/techlib/prot/fm_1414.pdf

QUALITY CONTROL

RNase T1 is rigorously tested for contaminating nonspecific endonuclease, exonuclease, and protease activity.

OTHER INFORMATION

Material Safety Data Sheets:

Material Safety Data Sheets (MSDSs) can be printed or downloaded from product-specific links on our website at the following address: www.ambion.com/techlib/msds. Alternatively, e-mail your request to MSDS_Inquiry_CCRM@appliedbiosystems.com. Specify the catalog or part number(s) of the product(s), and we will e-mail the associated MSDSs unless you specify a preference for fax delivery. For customers without access to the internet or fax, our technical service department can fulfill MSDS requests placed by telephone or postal mail. (Requests for postal delivery require 1–2 weeks for processing.)

Warranty and Liability:

For research use only. Not for use in diagnostic procedures.

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