

## RNase III, *E. coli*

Cat. No. RN02950

Connect with Epicentre on our blog ([epicentral.blogspot.com](http://epicentral.blogspot.com)),  
Facebook ([facebook.com/EpicentreBio](https://facebook.com/EpicentreBio)), and Twitter ([@EpicentreBio](https://twitter.com/EpicentreBio)).

## 1. Introduction

Ribonuclease III (RNase III) is an endoribonuclease from *E. coli* that specifically digests double-stranded RNA (dsRNA) to dsRNA fragments that have 2-base, 3'-overhangs.<sup>1,2</sup> Complete digestion of dsRNA results in dsRNA fragments of 12-15 bp.

RNase III can digest dsRNA composed of canonical ribonucleotides as well as DuraScript™ RNA which contains 2'-fluorine-CMP and 2'-fluorine-UMP in place of the canonical CMP and UMP nucleotides.

Epicentre's RNase III is provided at a concentration of 1 Unit/μl with a specific activity of ~10<sup>3</sup> Units/mg of protein.

## 2. Applications

- Digest long dsRNA to short dsRNA fragments.
- RNA structure studies.<sup>3</sup>
- RNA processing and maturation studies.<sup>4,5,6</sup>

## 3. Product Specifications

**Storage:** Store only at -20°C in a freezer without a defrost cycle.

**Storage Buffer:** RNase III is supplied in a 50% glycerol solution containing 50 mM Tris-HCl (pH 7.5), 0.5 M NaCl, 0.1 mM EDTA, 1 mM dithiothreitol (DTT) and 0.1% Triton® X-100.

**RNase III Reaction Buffer:** 33 mM Tris-acetate (pH 7.5), 66 mM potassium acetate, 10 mM magnesium acetate and 0.5 mM DTT.

**Unit Definition:** One unit degrades 1 nmol of poly A:poly U dsRNA in 30 minutes into acid-soluble nucleotides at 37°C.

**Quality Control:** RNase III is function-tested to specifically degrade dsRNA transcripts in a reaction mixture containing double-strand RNA, single-strand RNA and double-strand DNA.

## 4. Related Products

The following products are also available:

- AmpliScribe™ T7 High Yield Transcription Kit
- DuraScribe™ T7 Transcription Kit
- T7 Phage RNA Polymerase
- *E. coli* RNA Polymerase Core and Holoenzymes
- Ribonuclease T1
- Ribonuclease I, *E. coli*
- Ribonuclease H, *E. coli*
- Ribonuclease R, *E. coli*

## References

1. Robertson, H.D. *et al*, (1968) *J. Biol. Chem.* **243**, 82.
2. Lamontagne, B. *et al*, (2001) *Curr. Issues Mol. Biol.* v.3, 71, Academic Press.
3. Evguenieva-Hackenberg, E. and Klug, G. (2000) *J. Bacteriol.* **182**, 4719.
4. Nicholson, A.W. (1999) *FEMS Microbiol. Rev.* **23**, 371.
5. Grunberg-Manago, M. (1999) *Annual Rev. Genet.* **33**, 193.
6. Drider, D. *et al*, (1999) *J. Mol. Microbiol. Biotechnol.* **1**, 337.

*AmpliScribe, DuraScribe, and DuraScript, are trademarks of Epicentre, Madison, Wisconsin.*

*Triton is a registered trademark of Rohm & Haas, Philadelphia, Pennsylvania.*

Visit our technical blog: [epicentral.blogspot.com](http://epicentral.blogspot.com)