

Shrimp DNase

- Approximately 30 times greater specific activity than DNase I.
- Heat labile; more easily heat denatured.
- Eliminates concern with handling bovine derived DNase.
- Strong preference for double-stranded DNA (dsDNA), thus enzyme may be used to specifically degrade dsDNA, leaving single-stranded DNA intact.



Source:

Pandalus borealis (arctic shrimp)

Description:

Shrimp Deoxyribonuclease (DNase) is an endonuclease that cleaves phosphodiester linkages in DNA to yield di- and oligonucleotides with 5'-phosphate and 3'-hydroxyl termini.

Shrimp DNase is similar to DNase I but has approximately 30 times greater specific activity. Also, Shrimp DNase is heat labile and has a strong preference for the hydrolysis of double-stranded DNA. Single-stranded DNA (ssDNA) is hydrolyzed at a rate of 2-5% that of dsDNA, thus the enzyme can be used to specifically degrade dsDNA, leaving ssDNA mostly intact. Shrimp DNase may be used to eliminate DNA from RNA preparations prior to RT-PCR.

Applications:

1. Replaces bovine DNase I.
2. Removal of DNA prior to RT-PCR. (Note: Add EDTA during heat inactivation reactions with T3, T7 or SP6 RNA Polymerases.)
3. Removal of DNA templates from RNA produced by *in vitro* transcription.
4. Determine footprints of DNA binding proteins.
5. Nick translation with DNA Polymerase I (PN 70010).
6. Selective degradation dsDNA.

USB Corporation
26111 Miles Road; Cleveland, OH 44128
800.321.9322 | www.usbweb.com

 **usb**[®]
Fueling Innovation™

Unit Definition:

One unit increases the absorbance at 260 nm by 0.001 per min per ml at 25°C and pH 5.0 when acting on highly polymerized DNA in the presence of ionized magnesium and calcium ⁽¹⁾.

Concentration:

2 units/μl

Shipping and Storage:

Shipped on dry ice. Store at -20°C.

Properties:

Activators: Mg²⁺ ions are required for maximum activity.

Inactivation: The enzyme is easily heat-inactivated at 65°C for 15 min, without the use of EDTA.

(Note: EDTA is recommended for DNA free-RNA treatment as this avoids high temperature RNA hydrolysis in the presence of divalent cation.)

Optimum pH: 7.5

Shrimp Deoxyribonuclease

Product Code	Pack Size	List Price
78305	100 units	\$72.00
Customs By Request		

Storage Buffer:

25mM Tris-HCl (pH 6.9 at 0°C), 2.5mM MgCl₂, 0.25mM CaCl₂, 50% glycerol.



Protocol Recommendation:

For preferential degradation of dsDNA and minimum RNase activity use a reaction buffer containing 50mM Tris-HCl (pH 8.0) and 2.5mM MgCl₂.

For non-specific degradation of nucleic acids use a reaction buffer containing 50mM Tris-HCl (pH 8.0), 10mM MgCl₂ and 1mM CaCl₂.

Reference:

1. KUNITZ, (1950) *J. Gen. Physiol.* **33**, 349.



All goods and services sold are subject to the terms & conditions of sale from USB Corporation or the company which supplies them. A copy of these terms & ditions available upon request.

©2003 USB Corporation. USB and logo design are registered trademarks of USB Corporation. The phrase 'Fueling Innovation' is a trademark of USB Corporation.



800.321.9322 | www.usbweb.com