

Nuclease P1 Enzyme

Nuclease P1 (Nuclease 5'-Nucleotidohydrolase, 3'-Phosphohydrolase, NP1)

CATALOG #
AAA14839

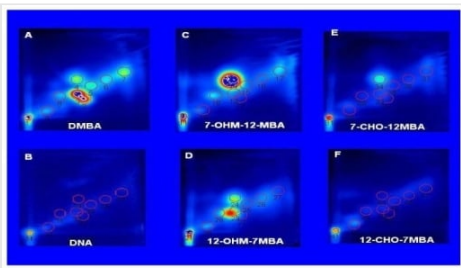
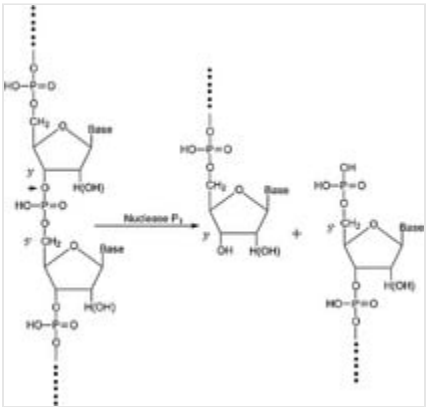
HOST
Penicillium citrinum

PRODUCT SYNONYMS

Nuclease P1; Nuclease P1 (Nuclease 5'-Nucleotidohydrolase; 3'-Phosphohydrolase; NP1); Nuclease P1 enzyme

PRODUCT SPECIFICATIONS

Host	Penicillium citrinum
Specificity	410u/mg protein
Purity/Purification	Molecular Biology Grade
Form/Format	Supplied as a powder lyophilized from a solution containing 30mM sodium acetate buffer, pH 5.3 with 5mM ZnCl ₂ and 50mM sodium chloride. Enzyme suspension obtained after reconstitution.
Concentration	Protein Concentration (before lyophilization): 1.50 mg/ml (varies by lot)
Specific Activity	410 u/mg protein
Stable pH	5.0-8.0
Optimum pH	5.3 for RNA and heat-denatured DNA 7.2 for 3' -AMP
Optimum Temperature	~70°C [<60°C for long incubations]
Reconstitution	For maximum recovery of product, briefly centrifuge the original vial prior to opening. This will dislodge any enzyme that has adhered to the side or in the cap due to shipping. Reconstitute with sterile ddH ₂ O. Allow the nuclease to rest on ice for ~10-15 minutes. Vortex gently to ensure there is uniform suspension (Nuclease tends to become layered towards the bottom of the vial). Just before addition to the reaction mixture, gently vortex the suspension.
Unit Definition	One unit of nuclease activity is defined as the amount of enzyme that produces 1umole of acid soluble nucleotides from RNA based on E = 10,600 for RNA hydrolysates per minute at 37 degree C, pH 5.3. One unit of the enzyme liberates 1umole of orthophosphate from 3'-AMP per minute at 37 degree C, pH 7.2
Substrate specificity	The enzyme hydolyzes both 3'-5' phosphodiester bonds in RNA and heat-denatured DNA, and 3'-phosphomonoester bonds in mono and oligonucleotides terminated with a 3'-phosphate group without base specificity. The enzyme does not attack double-stranded nucleic acids, especially in the presence of more than 400mM of sodium chloride at pH 6.0.
Preparation and Storage	Lyophilized powder may be stored at -20°C. Stable for 12 months. Reconstituted product should be aliquoted and stored at -20°C. Reconstituted product is stable for 2-3 weeks at 4°C and 3-6 months at -20°C. For maximum recovery of product, centrifuge the original vial after thawing and prior to removing the cap. Further dilutions can be made in assay buffer.



Application Data
Gen. Ref. 6: Autoradiogram of ³²P-postlabeled nuclease P1-treated DNA from photo-irradiation in the presence of (A) DMBA, (B) blank, (C) 7-HOCH₂-12-MBA, (D) 12-HOCH₂-7-MBA, (E) 7-CHO-12-MBA, and (F) 12-CHO-7-MBA in THF and calf thymus DNA by UVA light at a total dose of 14 J/cm².

Application Data
EC=3.1.30.1; Endonuclease P1; Nuclease 5'→3';-Nucleotidehydrolase; 3'→3';-Phosphohydrolase; NP1



Application Data
Nuclease P1 (Nuclease 5'→3';-Nucleotidehydrolase, 3'→3';-Phosphohydrolase, NP1

ADDITIONAL INFORMATION

Product Categories/Family for Nuclease P1 enzyme	Molecular Biology; MB-Enzymes
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NCBI AND UNIPROT INFORMATION

NCBI GI #	236381
Molecular Weight	42-50kD
NCBI Official Full Name	nuclease P1 {EC 3.1.30.1}

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | contact@aaabiotech.com
Online datasheet: <https://www.aaabiotech.com/enzyme/nuclease-p1/14839>