Active Native Clostridium perfringens Neuraminidase, Type VIII

Cat. No. Neuraminidase-009C **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Type VIII, Protein, ≥85% biuret
Species	Clostridium perfringens (C. welchii)
Description	Neuraminidase enzymes are glycoside hydrolase enzymes that catalyze hydrolysis of terminal sialic acid residues. The most well-known are the viral nearamidases, which promote influenza virus release.
Form	Lyophilized powder
CAS Number	9001-67-6
Enzyme Commission number	3.2.1.18 (BRENDA, IUBMB)
EC Number	232-624-6
MDL number	MFCD00131711
UNSPSC Code	12352204
NACRES	NA.54
Foreign activity	Protease and NAN-aldolase, present

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Biochem/physiol Actions	Neuraminidase cleavage of sialic acid groups has been used to study recognition by antibodies of glycoprotein structures. The use of neuraminidase in the estimation of N-acetylneuraminic acid was compared favorably to two other methods. Neuraminidases are used to cleave terminal N-acetyl neuraminic acid (sialic acid) from a variety of glycoproteins. The enzyme from Clostridium perfringens cleaves terminal sialic acid residues which are α-2,3-α-2,6- or α-2,8-linked to Gal, GlcNac, GalNAc, AcNeu, GlcNeu, oligosaccharides, glycolipids or glycoproteins. The relative rate of cleavage decreases in the order: α-2-3> α-2-6. α-2-8. Neuraminidase from C. perfringens cleaves α-2-3 linked sialic acid residues most efficiently, compared to A. ureafaciens, which preferentially cleaves α-2-6 linked residues. The degradation of gangliosides grown in lipid mono layers by Clostridium perfringens neuraminidase depends largely on surface pressure. Increased pressure can inhibit neuraminidase activity. The use of neuraminidase to remove sialic acid residues from glycoproteins on cell surfaces has been frequently reported. Generally, procedures have indicated using neuraminidase in PBS at 37 centigrade for 30 minutes, followed by several washings with PBS. Treatment of tissue sections with neuraminidase at much lower concentrations require longer incubation: for 1-4 U/mL in 0.1 M acetate buffer pH 4.2-5, from 2 to 20 hours at 37 centigrade.
Bio-activity	10-20 units/mg protein (using 4MU-NANA) 3.5-8.0 units/mg protein (mucin)
Unit Definition	One unit will liberate 1.0 micromole of N-acetyl neuraminic acid per minute at pH 5.0 at 37 centigrade using bovine submaxillary mucin. One unit will hydrolyze 1.0 micromole of 2′-(4-methylumbelliferyl)-a-D-N-actetylneuraminic acid per minute at pH 5.0 at 37 centigrade (using 4MU-NANA as a substrate)

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Applications	Neuraminidase from Clostridium perfringens has been used in a study to assess the binding characteristics of iota toxin by fluorescence-activated cytometry. It has also been used in a study to investigate the distribution of neuraminidase among food poisoning strains.
Storage	At -20 centigrade

GENE INFORMATION

Official Symbol	Neuraminidase
Synonyms	Acyl-neuraminyl Hydrolase; Receptor-destroying enzyme; Sialidase; Neuraminidase; Neuraminidase Type VIII

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