α-(2→3,6)-Neuraminidase, Positionally specific, from Clostridium perfringens expressed in E. coli

Product Number N 5521
Storage Temperature 2–8 °C

CAS® 9001-67-6
EC 3.2.1.18
Synonyms: Sialidase; N-Acetylneuraminidase; N-Acetylneuraminate glycohydrolase

Product Description
Two major classes of oligosaccharides (glycans) may be attached to glycoproteins. N-Linked glycans are attached to the amide side chain of some asparagine (Asn) residues, which form part of the consensus sequence AsnXaaSer/Thr, while O-linked glycans may be added to the hydroxyl side-chain of serine or threonine residues. The terminal residues on these glycan chains are commonly N-acetylneuraminic acids (sialic acids). Neuraminidase can be used directly on intact glycoproteins or purified glycans as a gentle means of removing sialic acid.

Recombinant α-(2→3,6)-Neuraminidase from Clostridium perfringens, expressed in glycosidase-free Escherichia coli, is a highly purified enzyme, which hydrolyzes non-reducing, terminal α-2→3 and α-2→6 linked sialic acids from complex glycans and glycoproteins. The relative rate of cleavage of α-2→3 linkages is reported to be greater than that for α-2→6 linkages.1,2 Due to the selectivity of this enzyme, it is an useful reagent for detailed structural analysis of glycans when used in conjunction with other broader specificity neuraminidase enzymes.

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\text{NeuNAc}_\alpha 2 \underset{3,6\text{Gal-R}}{\longrightarrow} \\
R = \text{carbohydrate, serine or threonine}
\]

Molecular weight: ∼41 kDa

pH Range for activity: 4.5 – 7.0 (Optimal pH: 6.0)

Inhibitors: Thiol blockers and heavy metal ions (Hg²⁺, Fe³⁺)

Components
α-(2→3,6)-Neuraminidase (Product No. N 5521) - The enzyme is supplied in 20 mM Tris HCl, pH 7.5, containing 25 mM NaCl.

Unit Definition: One unit will hydrolyze 1 µmole of 4-methylumbelliferyl α-D-N-acetylneuraminide per minute at pH 5.0 at 37 °C.

Protease activity was not detected.

5x Reaction Buffer (Product No. R 0266) – 250 mM sodium phosphate, pH 6.0

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability
It is recommended to store the product at 2–8 °C. Do Not Freeze.

Procedure
1. Dispense 1 nmole of glycan or 100 µg of glycoprotein into a tube.
2. Adjust final volume to 14 µl with deionized water.
3. Add to this 4 µl of 5x Reaction Buffer.
4. Then add 2 µl of α-(2→3,6)-neuraminidase.
5. Cap the tube and incubate at 37 °C for 1 hour.

To hydrolyze larger amounts of substrate, increase the reaction volume and volume of enzyme proportionally.
References


AE,MAM 03/05-1