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Not for use in diagnostic procedures.



Neuraminidase (Sialidase) from *Clostridium perfringens* Acylneuraminyl hydrolase

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Lyophilized

Cat. No. 11 585 886 001 5 U

Store the lyophilizate at +2 to +8°C.

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1. General Information

1.1. Contents

Vial / Bottle	Label	Function / Description	Content
1	Neuraminidase From <i>Clostridium perfringens</i>	Special quality with low protease content.	1 vial, 5 U

1.2. Storage and Stability

Storage Conditions (Product)

When stored at +2 to +8°C, the product is stable through the expiry date printed on the label.

Vial / Bottle	Label	Storage
1	Neuraminidase	Store at +2 to +8°C. <i>i</i> Stable at –15 to –25°C, and is also active after short exposure to higher temperatures.

Reconstitution

Reconstitution and preparation of stock solution

- 1 Reconstitute lyophilizate in double-distilled water or sample buffer.
 - 2 After reconstitution, the enzyme is stable for several weeks stored at +2 to +8°C.
⚠ Freeze for longer storage.
 - 3 Prepare a stock solution with a concentration of 5 U/100 µl.
- i* The enzyme loses approximately 50% of its activity after incubation at +37°C for 24 hours.

1.3. Application

Use Neuraminidase for

- Virus receptor studies.
- Studies on the interaction of lymphocytes with tumor cells.
- Cell hybridizations.
- Analysis of oligosaccharides.
- Analysis of glycoproteins.
- Analysis of glycolipids.

2. How to Use this Product

2.1. Parameters

Contaminants

When incubating Neuraminidase from *Clostridium perfringens* with casein, resorufin-labeled, the proteases activity is lower than 0.1%.

EC-Number

EC 3.2.1.18

Inhibition

The activity of the Neuraminidase is inhibited by iodoacetate, arsenite, Fe³⁺, and Hg²⁺ ions as well as by atmospheric oxygen (in the presence of heavy metals). N-acetyl neuraminic acid is a competitive inhibitor.

i Ca²⁺ and EDTA have no influence on the enzyme activity.

pH Optimum

The pH optimum of the enzyme is

- at pH 5.0 to 5.1 in acetate buffer, and
- at pH 5.8 to 6.0 in phosphate buffer.

Specific Activity

≥10 U/mg protein.

Specificity

Neuraminidase is an exoglycosidase with a broad substrate specificity and cleaves terminal sialic acids linked via an α(2-3), α(2-6), or α(2-8) binding to N- or O-glycosidic-bound oligosaccharide chains of glycoproteins and glycolipids.

- Neuraminic acids, linked in the α(2-8) position to other neuraminic acids, as found in, for example, disialyl-lactose, colominic acid, and gangliosides, are also cleaved.
- In contrast to Neuraminidase from *Arthrobacter ureafaciens**, Neuraminidase from *Clostridium perfringens* hydrolyzes α(2-3) linkages faster than α(2-6) linkages. α(2-8) bound sialic acids are cleaved with a similar velocity compared to α(2-6) bound sialic acids.

Relative hydrolysis velocities for several glycoproteins

Glycoprotein	Value [%]
N-acetylneuraminosyl-2,3-lactose	100
Bovine mucin	140
Fetuin	270
α ₁ -acid glycoprotein	550

Neuraminidase from *Clostridium perfringens* cleaves also N-glycolyl- as well as the 7- and 9-O-acetylsialic acids, however, with lower rates. 4-O-acetylsialic acids are not cleaved.

K_m values for several substrates

Substrate	K _m values [mM]
2,3-sialyl-lactose	1.6
2,6-sialyl-lactose	1.2
2,6-sialyl-galactose	0.8

Stabilizers

The enzyme can be stabilized by bovine serum albumin (BSA).

Unit Definition

One Unit is the enzyme activity that liberates one micromole of sialic acid per minute at 37°C, pH 5.0, from bovine submaxillary mucin.

3. Additional Information on this Product

3.1. Test Principle

Preparation

The enzyme is purified from the culture filtrate of *Clostridium perfringens*.

4. Supplementary Information

4.1. Conventions

To make information consistent and easier to read, the following text conventions and symbols are used in this document to highlight important information:

Text convention and symbols

i *Information Note: Additional information about the current topic or procedure.*

⚠ **Important Note: Information critical to the success of the current procedure or use of the product.**

① ② ③ etc. Stages in a process that usually occur in the order listed.

1 2 3 etc. Steps in a procedure that must be performed in the order listed.

* (Asterisk) The Asterisk denotes a product available from Roche Diagnostics.

4.2. Changes to previous version

Layout changes.

Editorial changes.

4.3. Ordering Information

Product	Pack Size	Cat. No.
Reagents, kits		
Neuraminidase (Sialidase)	1 U, 100 µl	10 269 611 001

4.4. Trademarks

All product names and trademarks are the property of their respective owners.

4.5. License Disclaimer

For patent license limitations for individual products please refer to:

List of biochemical reagent products.

4.6. Regulatory Disclaimer

For life science research only. Not for use in diagnostic procedures.

4.7. Safety Data Sheet

Please follow the instructions in the Safety Data Sheet (SDS).

4.8. Contact and Support

To ask questions, solve problems, suggest enhancements or report new applications, please visit our **Online Technical Support Site.**

To call, write, fax, or email us, visit **sigma-aldrich.com**, and select your home country. Country-specific contact information will be displayed.

