

Datenblatt Data sheet



Version: 14042011

Zuständig : GF

Product	Cat#	Package size
Galanthus nivalis lectin (GNA)	D1513.0005	5mg

Product Description

Galanthus nivalis lectin or agglutinin (GNA) is isolated from snowdrop bulbs. It has a molecular weight of 50 kDa and consists of four identical subunits (1). The lectin is known to agglutinate rabbit erythrocytes but not human erythrocytes (1). It binds specifically to murine IgM immunoglobulin and human α 2-macroglobulin. Structures containing (α -1,3) mannose residues are preferred for binding (2). It contains little or no carbohydrate and does not need Ca^{2+} or Mn^{2+} for binding, since unlike most mannose-specific lectins it is not a metalloprotein. Unlike the majority of mannose-binding lectins, GNA does not bind alpha-linked glucose. GNA has been useful in HIV research (3). It is also applicable for blood cell agglutination studies but also as a model system to help understand the molecular basis of how proteins recognize carbohydrates.

Genaxxon's GNA lectin is supplied as a white to cream coloured lyophilized powder. The purity of GNA lectin is determined by SDS- electrophoresis, which generates one single band at 13 kDa corresponding to the four identical polypeptide chains. The lectin is available in vials containing 5 mg powder and is to be used for laboratory work only.

Features

- Ultrapure quality
- Agglutinates rabbit erythrocytes
- Sugar specificity: (α -1,3) mannose residues
- Binds to serum IgM and α 2- macroglobulin
- Lyophilized powder

Specifications

White to cream coloured lyophilized powder
Source: Snowdrop bulbs
Molecular weight 52 kDa
Sugar specificity: (α -1,3) Man residues
Microorganisms: <100 CFU/g

Activity: Blood group non-specific

Protein content: >85 %, OD280nm (ϵ 1mg/mL = 1.14), >95%, essentially salt free

Identity & Purity: SDS-PAGE, one band at 13 kDa

Applications

- Blood cell agglutination studies
- Model systems to help understand the molecular basis of how proteins recognize carbohydrates
- HIV research

Directions for use

The lectin may be reconstituted with 2mL of deionized water before use. Spin the vial gently until full dissolution.

Aggregation is thought to occur in the presence of high concentrations of 2-mercaptoethanol. The solution may be reconstituted in this buffer to desired working concentration. In absence of lactose the lectin will polymerize and storage at pH8.6-8.8 causes precipitation.

Shipping and storage

The product is shipped at -20°C however for over-the-day transport it may be shipped at ambient temperature. The lyophilized powder is stable for more than three years from production date when stored below -20°C . After reconstitution with deionized water, the solution may be stored frozen in working aliquots for up to 12 months.

Avoid repeated freezing and thawing

Certifications

Genaxxon bioscience is ISO 9001:2008 certified. Each stage of the manufacturing process is controlled and monitored by stringent quality control procedures to guarantee the highest possible quality and lot-to-lot reproducibility.

References

- (1) Naoto Shibuya, Irwin J. Goldstein, Els J. M. Van Damme and Willy J. Peumans. (1988) Binding Properties of a Mannose-specific Lectin from the Snowdrop (*Galanthus nivalis*) Bulb* J. Mol. Biol. Vol. 263, No. 2, Issue of January 15, pp. 728-734
- (2) Christine S. Wright, Hanae Kaku and Irwin J. Goldstein (1990). Crystallization and Preliminary X-ray Diffraction Results of Snowdrop (*Galanthus nivalis*) Lectin. J.Mol.Biol. Vol. 265, No. 3, Issue of January 25, pp. 1676-1677
- (3) Gilljam, G. AIDS Reserach and Human Retroviruses. May 1993; 9(5): 431-8.
- (4) The mannose-specific bulb lectin from *Galanthus nivalis* (snowdrop) binds mono- and dimannosides at distinct sites. Structure analysis of refined complexes at 2.3 Å and 3.0 Å resolution. Hester, G., Wright, C.S. (1996) J.Mol.Biol. 262: 516-31.

Handling

Good laboratory practice should be employed in the safe handling of any biochemical product. If you are not fully trained or are unaware of the hazards involved, do not use this compound!

Caution: do not take internally! Avoid contact by all modes of exposure. Wear appropriate laboratory attire including a lab coat, gloves, mask and safety glasses. Do not mouth pipette, inhale, ingest or allow coming into contact with open wounds. Wash thoroughly any area of the body which comes into contact with the product. Avoid accidental auto inoculation by exercising extreme care when handling in conjunction with any injection device.

This product is intended for research usage by qualified personnel only. It is not intended for use in humans or animals or as a diagnostic agent. Genaxxon is not liable for any damages resulting from misuse or handling of this product.