ABSOLUTE LECTINS

05-0111 Pisum sativum lectin (PSA)

Benefits

- Ultrapure quality
- Carbohydrate binding specificity: α-D-mannose and α-D-glucose (1)
- Non-specific blood group agglutinin (1)
- Mitogenic activity (2)
- Lyophilized powder

Product description

Pisum sativum lectin or agglutinin (PSA) is isolated from peas and purified by affinity chromatography. The lectin has four subunits and a molecular weight of 49 kDa. PSA agglutinates human erythrocytes but is not blood group specific (1). It displays specificity toward α-D-mannose and α-D-glucose (1) and has mitogenic activity similar to Concanavalin A (2).

Medicago's PSA lectin is supplied as a white to cream-coloured lyophilized powder. The purity of PSA is determined by SDSelectrophoresis, which generates two bands at 17 kDa and 5,7 kDa corresponding to the α- and ß-chains that are formed in solution, below pH 5.8. The lectin is available in vials containing 100 mg, 25 mg or 10 mg powder and the product is to be used for laboratory work only.

Applications

- Model system to help understand the molecular basis of how proteins recognize carbohydrates

Directions for use

The lectin may be reconstituted with 2 ml of PBS buffer before use, spin the vial gently until full dissolution. The solution may be reconstituted in this buffer to desired working concentration.

Tips and hints

Avoid repeated freezing and thawing.

Figure 1: Crystal structure of PSA-D-glucopyranose complex (3)

Specifications	*Pisum sativum lectin (PSA) (05-0111)*
Appearence	White to cream-coloured lyophilized powder or flocculate
Source	Peas
Molecular weight	49 kDa
Sugar specificity	α-D-Man and α-D-Glu
Activity	10-100 µg/ml lectin is required to agglutinate neuraminidase treated erythrocytes. Agglutinates human erythrocytes; not blood group specific.
Microorganisms	≤ 100 CFU/g
Shelf life	≥ Three years when stored at -20°C

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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.

Certifications

Medicago's laboratories and manufacturing site in Uppsala are ISO 9001:2015 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.

Intertek

Ordering information

Article no.	Product name	Pack size
05-0111-10mg	*Pisum sativum lectin*	*10 mg*
05-0111-25mg	*Pisum sativum lectin*	*25 mg*
05-0111-100mg	*Pisum sativum lectin*	*100 mg*
05-0111-1g	*Pisum sativum lectin*	*1 g*

References

(1) Liener I. E., Sharon N., Goldstein I. J., (1986) The Lectins – Properties, Functions and Applications in Biology and Medicine.

(2) X-ray crystallographic studies of unique cross-linked lattices between four isomeric biantennary oligosaccharides and soybean agglutinin. Olsen, L.R., Dessen, A., Gupta, D., Sabesan, S., Sacchettini, J.C., Brewer, C.F. (1997) Biochemistry 36: 15073–80.

(3) The structure of Pea Lectin-D-Glucopyranose Complex at a 1.9 A Resolution. Pletnev, V.Z., Ruzheinikov, S.N., Tsygannik, I.N., Mikhailova Yu, I., Duax, W., Ghosh, D., Pangborn, W. (1997) Russ.J.Bioorganic Chem. 23:469

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