ABSOLUTE LECTINS

05-0133 Artocarpus integrifolia lectin (Jacalin)

Benefits

- Galactose-binding lectin (1)
- Highly specific for the tumour-associated T-antigenic disaccharide (2)
- Agglutinates human erythrocytes at a concentration of ≥ 7.8 µg/ml
- High activity

Product description

Artocarpus integrifolia lectin (Jacalin) is isolated from jackfruit seeds and purified by affinity chromatography. The lectin belongs to the family of galactose-binding lectins (1) and it has a tetrameric two-chain structure (Figure 1) with a molecular weight of 66 kDa (2).

Lectins are, due to their specific binding to carbohydrate structures on the cell surface or elsewhere useful in haematology, immunology or as specific markers for membrane glycoprotein structures (2). Jacalin is preferably used in applications to isolate IgA from human serum, isolating human plasma glycoproteins and for applications in histochemistry. The lectin is blood group non-specific after neuraminidase treatment and agglutinates human erythrocytes at a concentration of ≥ 7,8 µg/ml.

A post-translational proteolytic modification of Jacalin gives the lectin a novel carbohydrate-binding site involving the N-terminus of the α-chain. The relative affinities of the lectin for galactose derivatives, as well as the structural basis of its T-antigen specificity, are explained by its protein structure (2).

Medicago's Jacalin is supplied as a white to light-yellow lyophilized powder from 50 mM NH_4HCO_3, 10 µM $CaCl_2$, no preservatives are added. The purity of the lectin is determined by SDS-PAGE, generating two homogeneous bands at 12 kDa and 16 kDa. The lectin concentration is determined by amino acid analysis, minimum 80%. It is available in vials containing 100 mg or 10 mg lyophilized powder and is to be used for laboratory work only.

Applications

- Isolation of IgA from human serum
- Isolation of human plasma glycoproteins
- AIDS research

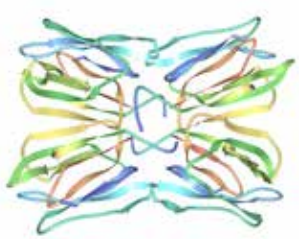

Figure 1: Crystal structure of Jacalin (3)

Specifications	*Artocarpus integrifolia lectin (Jacalin) (05-0133)*
Appearence	White to light-yellow lyophilized powder
Source	Jackfruit seeds
Molecular weight	66 kDa
Activity	Agglutinates human erythrocytes at a concentration of ≥ 7,8 µg/ml. Blood group non-specific after neuraminidase treatment.
Microorganisms	≤ 100 CFU/g
Shelf life	≥ Five years when stored at -20°C

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Directions for use

The lectin may be reconstituted with 2 ml of deionized water before use, spin the vial gently until full dissolution. The solution may be stored frozen in working aliquots for up to 12 months. Aggregation is thought to occur in the presence of high concentrations of 2-mercaptoethanol.

Tips and hints

Avoid repeated freezing and thawing.

Shipping and storage

The product may be 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 five 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.

Ordering information

Article no.	Product name	Pack size
05-0133-10mg	*Artocarpus integrifolia lectin*	*10 mg*
05-0133-100mg	*Artocarpus integrifolia lectin*	*100 mg*
05-0133-1g	*Artocarpus integrifolia 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) Sankaranarayanan R., Sekar K., Banerjee R., Sharma V., Surolia A., Vijayan M, (1996) A novel mode of carbohydrate recognition in jacalin, a Moraceae plant lectin with a b-prism fold. Nature Structural Biology 3, 596–603.

(3) Structural basis for the unusual carbohydrate-binding specificity of jacalin towards galactose and mannose. Bourne, Y., Astoul, C.H., Zamboni, V., Peumans, W.J., Menu-Bouaouiche, L., Van Damme, E.J., Barre, A., Rouge, P. (2002) Biochem.J. 364: 173–180.

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