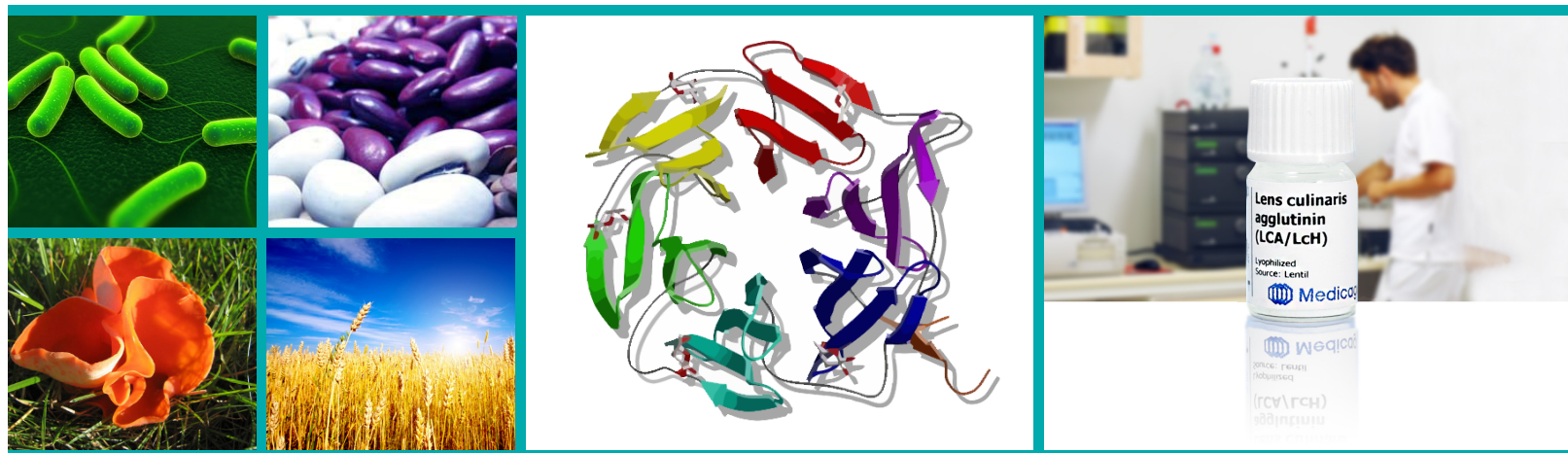


# Absolute Lectins

- Purified by biospecific affinity chromatography
- Highest activity & superior specificity
- Wide range of validated applications
- Stable lyophilized powder
- Custom, bulk and OEM lectins and conjugates



# Ultrapure Tools for Glycoscience and Medical Research

## Absolute Lectins

Medicago is a developer and one of the world's few primary manufacturers of a wide variety of exceptionally pure lectins isolated by affinity chromatography. Lectins are commonly found in grains and beans but also in fungi, bacteria and animals.

## Exceptionally Pure with Highest Activity

Lectins are sugar-binding proteins that are highly specific for certain carbohydrate moieties. They are known to bind to structures in cell walls or membranes, thereby causing agglutination, mitosis or other biochemical changes in the cell. These reactions may be inhibited by mono- and oligosaccharides, which sterically blocks attachment to cell membranes.

Medicago's range covers lectins with specificity for **a broad range of carbohydrate motifs** shown in the table below. For various experimental applications lectins need to meet a high number of criteria in terms of purity and activity (ability to bind the specific carbohydrates). Medicago's lectins are purified by biospecific affinity chromatography and are extensively tested with SDS-PAGE, isoelectric focusing, spectrophotometry and agglutination assays.

## Validated for a Wide Range of Applications

Medicago's lectins are used in many applications in medicine, medical research and biochemistry as shown in the selection table below.

Purified lectins are important in clinical diagnostics and they are used for e.g. blood group typing, enzyme linked lectin assay (ELLA) and lateral flow diagnostics. Some of the glycolipids and glycoproteins on red blood cells can be identified by lectins. In medical research, lectins such as PHA or Con A, have been widely used as model systems to understand

**Selection Table for Absolute Lectins**

	Source	Mol. Wt. (kDa)	Subunits	Sugar specificity
Aleuria aurantia (AaL)	Recombinant	36	2	$\alpha$ -Fucose
Arachis hypogaea (PNA)	Peanut	110	4	$\beta$ -galactose
Artocarpus integrifolia (Jacalin)	Jackfruit	66	4	$\alpha$ -galactose
Concanavalin A (Con A)	Jack bean	104	4	$\alpha$ -mannose
Crotalaria juncea	Sunn hemp seed	124	4	Galactose
Galanthus nivalis (GNA)	Snowdrop bulb	52	4	non-specific
Glycine max (SBA)	Soy bean	120	4	galactose
Lens culinaris (LCA/LcH)	Lentil	46	2	$\alpha$ -mannose
Narcissus pseudonarcissus (NPA/NPL)	Daffodil/Lent lily	26	2	$\alpha$ -D-glucose
Phaseolus vulgaris (PHA-E)	Kidney bean	128	4	oligosaccharides
Phaseolus vulgaris (PHA-L)	Kidney bean	126	4	oligosaccharides
Phaseolus vulgaris (PHA-M)	Kidney bean	128	2	oligosaccharides
Phaseolus vulgaris (PHA-P)	Kidney bean	128	4	oligosaccharides
Pisum sativum (PSA)	Pea	49	4( $\alpha$ & $\beta$ ) (a)	$\alpha$ -mannose
Triticum vulgaris (WGA)	Wheat germ	36	2	(glucose)
Trichosanthes japonica agglutinin I (TJA I)	Japanese gourd	70	2	lactose
Trichosanthes japonica agglutinin II (TJA II)	Japanese gourd	62	2	lactose
Vicia ervilia (VEA)	Bitter vetch	53	$\alpha_2\beta_2$	$\alpha$ -mannose

**Abbreviations:** a - Lectin has subunits of different molecular weight, b - Lectin agglutinates rabbit, but not human, erythrocytes, c - Lectin is mitogenic

the molecular basis of how proteins recognize carbohydrates. Other applications include histochemical studies, lymphocyte subpopulations, cell fractionation and mitogenic stimulation studies. Also hormone receptor, HIV/AIDS research, other virus receptor and cancer studies are known applications.

Lectins are also used as biochemical separation tools. For instance Con A and WGA have been widely used in affinity chromatography for purifying glycoproteins (for example IgA and human plasma glycoproteins) glycolipids, cells and viruses. In general, proteins may be characterized with respect to glycoforms and carbohydrate structure by using lectins in affinity chromatography, affinity electrophoresis, affinity immunoelectrophoresis, and blotting.

### Reproducibility and Consistency Every Time

Our R&D laboratories and manufacturing site are ISO 9001 and ISO 13485 certified. Each stage of the lectins manufacturing process is controlled and monitored by stringent quality control procedures to guarantee the highest possible quality and lot-to-lot reproducibility.

### Get Exactly What You Want

Our state-of-the-art R&D laboratories and purification equipment together with our extensive expertise in the development and manufacturing of lectins and conjugates, make us a unique partner for custom-made solutions.

We manufacture from small to large scale according to customer specifications. We can accommodate a wide variety of requests from milligrams to kilograms, manufacture special batches with unique specifications in different format (lyophilized or liquid solutions) or formulations. We are recognized as a world-class, trusted and flexible partner with short decision and lead times, and a proven record for the highest quality, cost efficiency and delivery.

Lectin specific activity	Agglutination	Mitogenic	Examples of applications
Con A	—		Diagnostics of liver diseases
Con A(1->3)galNAc	T		Lymphocyte subset studies, lymphoid cell populations in diseases
Con A(1->6)GlcNAc	T	x	Isolation of human IgA and plasma glycoproteins
Con A, $\alpha$ -glc	—	x	Hormone receptor studies, affinity chromatography
Con A(1->6)GlcNAc	—	x	Studies of virus surface glycoproteins
Con A-reduc. D-man	(b)		HIV research
Con A(1->6)GlcNAc	—	x (c)	Blood group agglutination and glycoprotein studies
Con A(1->6)GlcNAc	—	x	Hemagglutination and cell agglutination studies
Con A-man	(b)	x	Mitogenic studies of human lymphocytes
Con A-saccharide	—	x	Erythrocyte agglutination studies
Con A-saccharide	—	x	Leucocyte agglutination studies, mammalian glycoprotein studies
Con A-saccharide	—	x	Stimulation of cell proliferation in lymphocyte cultures. Erythroagglutination
Con A-saccharide			Lateral flow erythrocyte separation
Con A(1->6)GlcNAc	—	x	Protein-carbohydrate interaction studies
Con A(1->6)GlcNAc(2), NeuNAc	—	x	Studies of glycoproteins and lipids, affinity chromatography
Con A-se	—		Diagnosis of colon cancer
Con A-se	—		Anti-H agglutinin
Con A(1->6)GlcNAc	—		Membrane protein studies

Con A-se for lymphocytes treated with neuramidase

# Medicago products

Ordering information			Ordering information		
Product name	Pack size	Article no.	Product name	Pack size	Article no.
<i>Aleuria aurantia</i> lectin (AAL)	2mg	05-0134-2	<i>Phaseolus vulgaris</i> (PHA-M) pure	1000 mg	05-1118-1000
<i>Arachis hypogaea</i> lectin (PNA)	50 mg	05-0116-50	<i>Phaseolus vulgaris</i> (PHA-M) pure	25 mg	05-1118-25
<i>Arachis hypogaea</i> lectin (PNA)	10 mg	05-0116-10	<i>Phaseolus vulgaris</i> (PHA-M) crude	1000 mg	05-1118-1000
<i>Artocarpus integrifolia</i> lectin (Jacalin)	100 mg	05-0133-100	<i>Phaseolus vulgaris</i> (PHA-M) crude	25 mg	05-1118-25
<i>Artocarpus integrifolia</i> lectin (Jacalin)	10 mg	05-0133-10	<i>Phaseolus vulgaris</i> P lectin (PHA-P)	5 mg	05-0115-5
<i>Concanavalin A</i> lectin (Con A)	250 mg	05-0106-250	<i>Phaseolus vulgaris</i> P lectin (PHA-P)	10 mg	05-0115-10
<i>Concanavalin A</i> lectin (Con A)	100 mg	05-0106-100	<i>Pisum sativum</i> lectin (PSA)	100 mg	05-0111-100
<i>Crotalaria juncea</i> lectin	50 mg	05-0105-50	<i>Pisum sativum</i> lectin (PSA)	25 mg	05-0111-25
<i>Crotalaria juncea</i> lectin	10 mg	05-0105-10	<i>Pisum sativum</i> lectin (PSA)	10 mg	05-0111-10
<i>Galanthus nivalis</i> lectin (GNA)	5 mg	05-0120-5	<i>Trichosanthes japonica agglutinin</i> I (TJA I)	100 mg	05-0036-100
<i>Glycine max</i> lectin (SBA)	50 mg	05-0117-50	<i>Trichosanthes japonica agglutinin</i> I (TJA I)	25 mg	05-0036-25
<i>Glycine max</i> lectin (SBA)	10 mg	05-0117-10	<i>Trichosanthes japonica agglutinin</i> I (TJA I)	2 mg	05-0036-2
<i>Lens culinaris</i> lectin (LCA/LcH)	100 mg	05-0104-100	<i>Trichosanthes japonica agglutinin</i> II (TJA II)	100 mg	05-0033-100
<i>Lens culinaris</i> lectin (LCA/LcH)	25 mg	05-0104-25	<i>Trichosanthes japonica agglutinin</i> II (TJA II)	25 mg	05-0033-25
<i>Lens culinaris</i> lectin (LCA/LcH)	10 mg	05-0104-10	<i>Trichosanthes japonica agglutinin</i> II (TJA II)	2 mg	05-0033-2
<i>Narcissus oseudonarcissus</i> lectin (NPA/NPL)	50 mg	05-0119-50	<i>Triticum vulgare</i> lectin (WGA)	100 mg	05-0102-100
<i>Narcissus oseudonarcissus</i> lectin (NPA/NPL)	10 mg	05-0119-10	<i>Triticum vulgare</i> lectin (WGA)	25 mg	05-0102-25
<i>Phaseolus vulgaris</i> E lectin (PHA-E)	5 mg	05-0131-5	<i>Triticum vulgare</i> lectin (WGA)	10 mg	05-0102-10
<i>Phaseolus vulgaris</i> L lectin (PHA-L)	10 mg	05-0132-10	<i>Vicia ervilia</i> lectin (VEA)	50 mg	05-0114-50
<i>Phaseolus vulgaris</i> L lectin (PHA-L)	2 mg	05-0132-2	<i>Vicia ervilia</i> lectin (VEA)	10 mg	05-0114-10

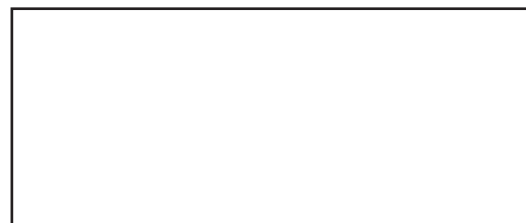
## Absolute Lectins-on-Demand

Besides our standard range we can provide the following lectins, among others, on a demand basis. Please contact Medicago for further information.

Lectins on demand			
<i>Agaricus bisporus</i> (ABA)	<i>Datura stramonium</i> (DSL)	<i>Maclura pomifera</i> (MPL)	<i>Solanum tuberosum</i> (STL, STA)
<i>Bandeiraea simplicifolia</i>	<i>Dolichos biflorus</i> (DBA)	<i>Phaseolus coccineus</i> (PCA)	<i>Tetragonolobus purpureus</i> (LTL)
<i>Bandeiraea simplicifolia</i> (BS-I)	<i>Euonymus europaeus</i> (EEL)	<i>Phytolacca americana</i> (PWM, PWA)	<i>Ulex europaeus</i> (UEA I)
<i>Bandeiraea simplicifolia</i> (BS-I-A4)	<i>Helix aspersa</i> (HAA)	<i>Pseudomonas aeruginosa</i> (PA-I)	<i>Vicia faba</i> (VFA)
<i>Bandeiraea simplicifolia</i> (BS-I-B4)	<i>Helix pomatia</i> (HPA)	<i>Pseudomonas aeruginosa</i> (PA-IIL)	<i>Vicia villosa</i> (VVL, VVA)
<i>Caragana arborescens</i> (CAA)	<i>Lycopersicon esculentum</i> (LEL)	<i>Psophocarpus tetragonolobus</i> (PTA)	<i>Wisteria floribunda</i> (WFA, WFL)
<i>Cicer arietinum</i> (CPA)	<i>Maackia amurensis</i> (MAA)	<i>Sambucus nigra</i> (SNA, EBL)	

For more information about our lectins or bulk quotations please call +46 18 56 11 80, email to [info@medicago.se](mailto:info@medicago.se) or visit [www.medicago.se/lectins](http://www.medicago.se/lectins)

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