



Product name:	<b><i>Lens culinaris</i> lectin, <i>Lens culinaris</i> agglutinin</b>
Production date:	2023-02
Date of release:	2023-03-20
Stability:	2028-02
Form:	Lyophilized
Source:	<i>Lens culinaris</i> seed

Analysis	Specification	Result
Appearance	White powder or flocculate by visual inspection resulting in a clear solution.	Fulfills requirement
Solubility	Dissolves in distilled water and 0.9% NaCl within 5 minutes.	Fulfills requirement
Assay (%)	≥ 85 % protein by OD <sub>280</sub> nm (ε 1mg/ml = 1,34), essentially salt free.	88.3%, fulfills requirement
Electrophoresis	Gives two major bands in isoelectroforesis corresponding to the two isomers LCA-A and LCA-B.	Fulfills requirement, see Appendix 1.
Activity Haemagglutination/inhibition	Agglutinates human erythrocytes (2% blood solution) when lectin concentration is ≤ 10 µg/ml in 0.9 % NaCl after 1 hour at 25 °C. inhibition appears with 60 mM Methyl mannoside (end conc. 20 mM) at a titer minimum 4 steps lower than titer of control. Control must have a titer of minimum 32.	Titer inhibition with 20 mM Methyl mannoside = 2; Agglutination at 5.2 µg/ml.  Fulfills requirement, see Appendix 2.
UV scan	Typical appearance of <i>Lens culinaris</i> lectin at 700-230 nm.	Fulfills requirement, see Appendix 3.
Bacterial burden	Less than 10 <sup>2</sup> CFU per 1 g of solid substance.	< 100 CFU/g, fulfills requirement

## Appendixes:

1. IEF electrophoresis
2. Activity, Haemagglutination control
3. UV Scan 700-230nm

The above material has met all quality specifications and has been reviewed by a quality representative.

Quality Assurance, Anna Eliasson

2023-03-20

Date



**Appendix 1: IEF electrophoresis**

**IEF analysis *Lens culinaris* lectin, Lot 290511**

Isoelectric focusing using Pharmacia Phastsystem (Amersham Biosciences).

**Materials**

Phastgel IEF 3-9

Reference proteins pH 3.5 – 9.3 (IEF Stdrd)

Amylglucosidase -	3.50 pI
Trypsin inhibitor -	4.55 pI
b-Lactoglobulin A -	5.20 pI
Carbonic anhydrase B (bovine) -	5.85 pI
Carbonic anhydrase B (human) -	6.55 pI
Myoglobin, acidic band -	6.85 pI
Myoglobin, basic band -	7.35 pI
Lentil lectin, acidic -	8.15 pI
Methyl red (dye) -	3.75 pI
Lentil lectin, middle -	8.45 pI
Lentil lectin, basic -	8.65 pI
Trypsinogen -	9.30 pI

**Method**

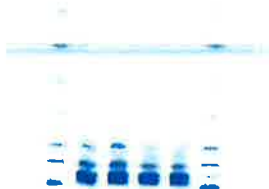
The proteins were diluted to 4 mg/ml in milliQ water supplemented with 30 % saccharose. The gels were fixed for 5 min, washed and stained with IEF staining sol. for 10 min at 50°C and then destained.

Program

Sample applicator down at	2.2	0Vh				
Sample applicator up at	2.3	0Vh				
SEP 2.1	2000V	2.5mA	3.5W	15°C	75Vh	
SEP 2.2	200V	2.5mA	3.5W	15°C	15Vh	
SEP 2.3	2000V	2.5mA	3.5W	15°C	410Vh	

**Result**

1 2 3 4 5 6 7 8



Lane 2. IEF standard pH 3.5 – 9.3

Lane 3. Lot 273107 reference

Lane 4. Lot 273107 reference

Lane 5. Lot 290511

Lane 6. Lot 290511

Lane 7. IEF standard pH 3.5 – 9.3

Analysis performed by

*Cynthia Hassinen*  
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 Cynthia Hassinen, 2023-02-14

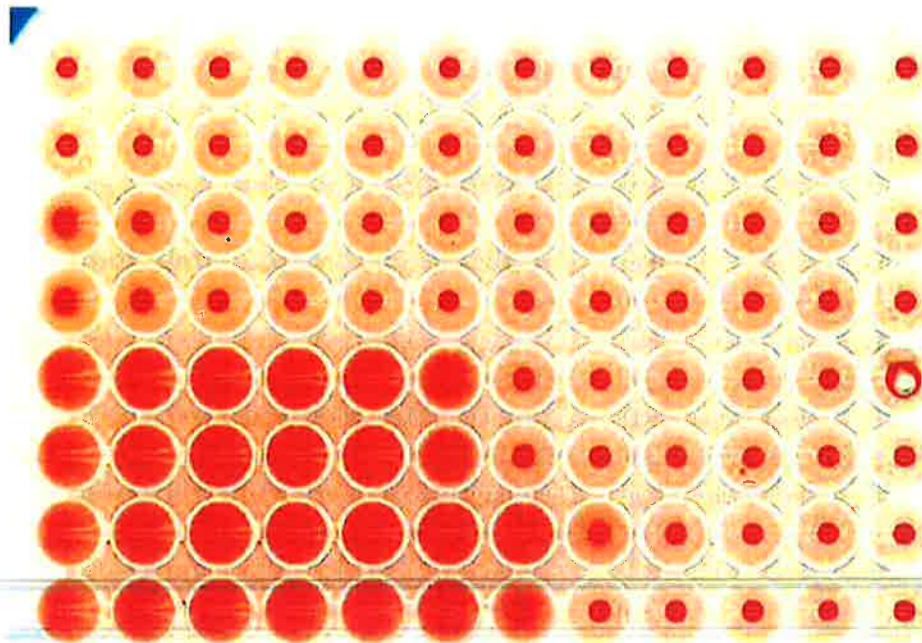


**Appendix 2: Activity, Haemagglutination control**

**Haemagglutination (human blood, group 0), Lot 290511**

***Lens culinaris* agglutinin (LCA)**

Column	1	2	3	4	5	6	7	8	9	10	11	12	
Conc	333	167	83	42	21	10	5.2	2.6	1.3	0.6	0.3	0.16	µg/mL
Titer	0	2	4	8	16	32	64	128	256	512	1024	2048	



Row A,B      Blank  
Row C,D      With 20 mM  $\alpha$ -metyl-D-mannosid  
Row E,F      With 2 mM  $\alpha$ -metyl-D-mannosid  
Row G,H      Only lectin without  $\alpha$ -metyl-D-mannosid (agglutination control)

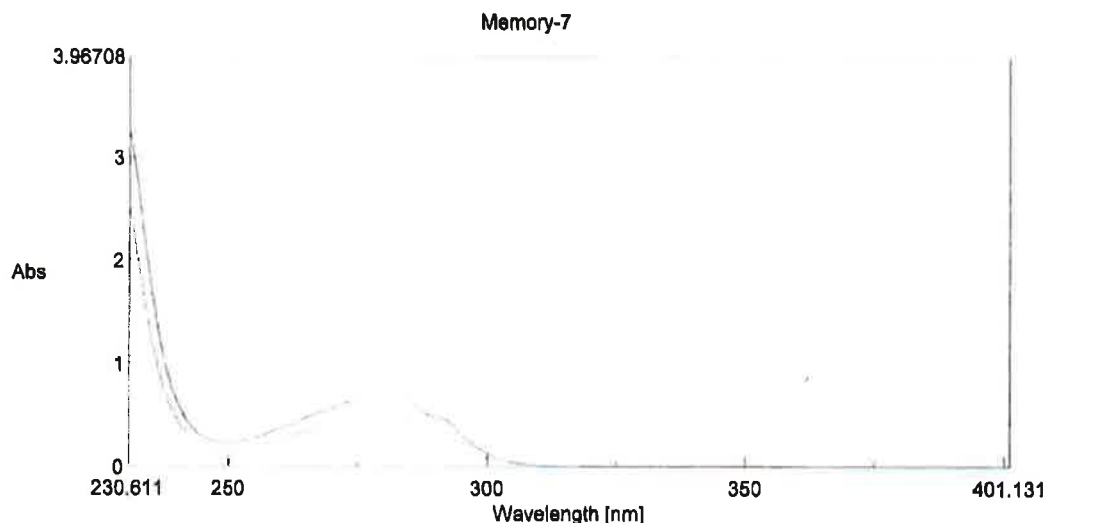
Plate scanned:

Signature:

  
Salah Ahmed / 2023-02-16



Appendix 3: UV Scan 700-230nm



[Comments]  
 Sample name referens  
 Comment lot 273107  
 User CH  
 Division QC  
 Company Medicago

Memory-2  
 LCA lot 290511 spektrum

[Detailed Information]  
 Creation date 2023-02-13 15:17

Data array type Linear data array  
 Horizontal axis Wavelength [nm]  
 Vertical axis Abs  
 Start 700 nm  
 End 230 nm  
 Data interval 0.5 nm  
 Data points 941

[Measurement Information]  
 Instrument name Jasco UV Vls  
 Model name V-760  
 Serial No. A011061800

Accessory USE-753  
 Accessory S/N A011061800  
 Cell  
 Ref. beam

Measurement date 2023-02-13 16:07

Parameter file C:\Program Files (x86)\JASCO\SpectraManager\samples\230-700.uvsp  
 Photometric mode Abs  
 Measurement range 700 - 230 nm  
 Data interval 0.5 nm  
 Bandwidth 2.0 nm  
 Response 0.06 sec  
 Scan speed 1000 nm/min  
 Change source at 340 nm  
 Light source D2/WI  
 Filter exchange Step  
 Correction Baseline