

Art no: 05-0115

CERTIFICATE OF ANALYSIS

Lot no: 253702



Product name:	PHA-P, Phaseolus vulgaris agglutinin P
Production date:	2019-09
Retested:	2024-06
Date of release:	2024-06-26
Stability:	2026-12
Source:	<i>Phaseolus Vulgaris</i> beans (Red Kidney Beans)
Form:	Lyophilized powder
Storage:	-18 °C (may be shipped at ambient temp)

Analysis	Specification	Result
Appearance	White powder to cream colored powder or flocculate	Pass
Solubility	1 mg/ml in PBS	Pass
Protein content	≥ 85 % (A280) ε 1mg/ml = 1,14	91,4 %, Pass
Purity	≥ 90% (SDS-PAGE)	Pass
Microbiology	< 100 CFU/g	Pass
Identity	One major band compare to reference (SDS-PAGE)	Pass, see appendix 1.
Activity	Agglutinates a 2% suspension of human bloodgroup 0 erythrocytes, at ≤ 4 µg/mL	2,0 µg/mL, Pass, see appendix 2.

Appendixes:
1. SDS-PAGE
2. Haemagglutination

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

Quality Assurance, Åsa Engström

2024-06-26

Date

Appendix 1. SDS-PAGE**SDS PAGE, analysis of PHA-P lot 253702-01**

Electrophoresis with Pharmacia Phastsystem (Amersham Biosciences)

MaterialPhast gel gradient 8 – 25
Phast gel SDS buffer strips**Method**

The proteins were dissolved to 2 mg/ml 1:1 in PBS and loading buffer (10.9 mM TRIS/HCl, 1.1 mM EDTA, 2.7 % SDS, 50 mM DTT)

LMW marker was from LMW SDS calibration kit for SDS electrophoresis (GE Healthcare)

MW of proteins included in LMW (14 000 Da - 97 000 Da) marker:

Phosphorylase b	97 000
Albumin	66 000
Ovalbumin	46 000
Carbonic anhydrase	30 000
Trypsin inhibitor	20 100
α -Lactalbumin	14 400

The samples were boiled for 5 min and approx. 1 μ l was applied on Phast gel (gradient 8 – 25) Program, 300v, 7.5 mA, 2.0 W, 80 Wh.

The gels were stained with Coomassie blue for 30 min and then destained

Result

1 2 3 4 5 6 7 8



Lane 1, 8	Empty
Lane 2, 5	LMW lot 302208
Lane 3, 4	PHA-P lot 253702-01 (Prov)
Lane 6, 7	PHA-P lot 251103 (reference)

Analysis performed by



Sahar Ahmed / 2024-06-10

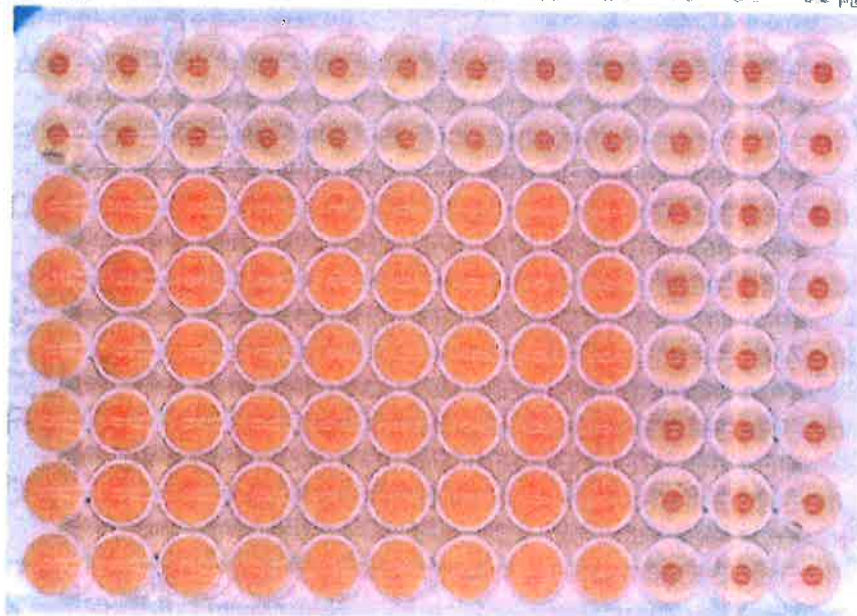
Appendix 2. Haemagglutination

Haemagglutination (human blood group 0)

Lectin from *Phaseolus vulgaris* (red kidney bean),

Phytohemagglutinin (PHA)-P art nr. 05-0115 lot 253702-01(omanalysis)

Column	1	2	3	4	5	6	7	8	9	10	11	12
Titer	0	2	4	8	16	32	64	128	256	512	1024	2048
Conc.	500	250	125	63	31	16	7.8	3.9	2.0	1.0	0.5	0.2 µg/mL



Row A,B Blank
 Row C-H PHA-P lot 253702-01

Date/Sign: *Ahmed Jalal*
 Sahab Ahmed / 2024-05-11