PRODUCT INFORMATION SHEET

Lupin, Egg and Wheat in Spiking Level Sample (SP)

PT originated REFERENCE MATERIAL (RM)

Description of the RM

Name / Material of related PT	*DLA ptAL02 (2024) – Allergens II: Lupin, Egg and Wheat (Gluten) in „gluten-free“ Bread Baking Mix with "Spiking Level Sample“ (3 different Samples) – **Sample SP** (Spiking Level Sample)*
Identifier / LOT	*RM 2024-AL02 SP*
Expiry date	*April 2028*
Matrix	*Potato Powder*
Physical description	*Powder*
Packaging / weight	*Sealed foil pouche / 15 g*
Storage conditions	*2-10°C (dry and dark)*
Name and address manufacturer	***DLA - Proficiency Tests GmbH*** *Hauptstr. 80, 23845 Oering, Germany* *Tel. ++49-(0)4532-9183358, Fax. ++49(0)4102-9944976* *eMail. pt@dla-lvu.de, website. www.dla-lvu.de*

Composition of Material

Ingredients	Sample A	Sample B	**SP Sample present sample**
Bread Baking Mix, “White Bread” Ingredients: rice flour, potato starch, fat powder (palm fat, hydrogenated), dextrose, ground psyllium husk, salt, thickener: hydroxypropylmethylcellulose, acidifier: citric acid and **positive sample:** allergenic ingredients as below Nutrients per 100 g: Fat 2,9 g, Carbohydrates 44 g, Fiber 2,4 g, Protein 3,3 g, Salt 1,2 g	100 g/100 g	99,9 g/100 g	-
Potato Powder Ingredients: Potatoes, E471, E304, E223, E100	-	-	99,9 g/100 g
Sweet lupin flour, mixture (4 products, Europe) – as lupin flour* – *thereof 38,6% total protein***	-	 20,2 mg/kg 7,79 mg/kg	 24,0 mg/kg 9,26 mg/kg
Whole egg powder, pasteurized, spray dried, mixture (6 products from 2 countries, Europe) – as whole egg powder* – thereof 46,9% total protein** – thereof 26,0% egg white protein***	-	 21,3 mg/kg 9,99 mg/kg 5,54 mg/kg	 21,1 mg/kg 9,89 mg/kg 5,49 mg/kg
Wheat flour, mixture (21 products from Europe, Asia, USA) – as wheat flour* – *thereof 10,1% total protein*** – *calculated as gluten****	-	 260 mg/kg 26,3 mg/kg 22,6 mg/kg	 253 mg/kg 25,6 mg/kg 22,0 mg/kg
further Ingredients: *Maltodextrin, sodium sulfate and silicon dioxide*	-	<0,2 g/100 g	<0,2 g/100 g

* Allergen contents as "total food" as described in the column ingredients according to the gravimetric mixture

** Protein contents according to laboratory analysis of the raw material (total nitrogen according to Kjeldahl with F=6,25 for lupin protein and whole egg protein, and F=5,7 for wheat protein)

*** Protein contents according to literature values: 26,0% egg white protein and 8,7% gluten in wheat flour

Note: *The metrological traceability of temperature, mass and volume during production of the PT samples is ensured by DAkkS-compliant calibrated*

reference materials.

Minimum Sample Size / Homogeneity

A minimum sample size of 5 g is recommended for sample preparation.

The homogeneity tests were performed with sample sizes of 5 g (Microtracer analysis).
The mixture homogeneity after bottling was examined 10-fold by microtracer analysis. Homogeneity was sufficient with a probability of ≥ 25% (excellent mixture) and a HorRat value in the range of acceptance (0,3 to 1,3).

Reference Values

All reference values were derived from the related PT round (for more details see final report).

Reference Values quantitative in mg/kg ELISA

Parameter	Lupin	Egg (as whole egg powder)	
	All Results*	All results*	Method RS-F**
Number of results	12	22	8
Number of outliers	-	-	-
Assigned Value (Xpt)	***29,1***	***23,7***	***20,9***
Robust standard deviation	9,10	5,77	3,05
Standard uncertainty	3,28	1,54	1,35
Target standard deviation σpt	7,28	5,92	5,22
Target range	***14,6 – 43,7***	***11,8 – 35,5***	***10,4 – 31,3***

* ELISA Method: diverse ELISA Methods
** ELISA Method: Ridascreen® Fast, R-Biopharm

Parameter	Gluten	
	All Results*	Method RS**
Number of results	25	19
Number of outliers	-	-
Assigned Value (Xpt)	***32,9***	***32,9***
Robust standard deviation	6,35	6,10
Standard uncertainty	1,59	1,75
Target standard deviation σpt	8,23	8,22
Target range	***16,5 – 49,4***	***16,4 – 49,3***

* ELISA Method: diverse ELISA Methods
** ELISA Method: RS = Ridascreen®, R-Biopharm

Reference Values qualitative ELISA / LFD

Parameter	Lupin*	Egg (as whole egg powder)*	Glulten*
Number positive	13	22	25
Number negative	0	0	0
Percent positive	100	100	100
Percent negative	0	0	
Consensus value	***positive***	***positive***	***positive***

* Results of diverse ELISA Methods (LODs positive results Lupin 0,2-1,0 mg/kg, Egg 0,25-1,0 mg/kg, Gluten 1,0-5,0 mg/kg)
** The results are in qualitative agreement with the spiking of sample A.

Reference Values qualitative PCR

Parameter	Lupin*	Wheat (as Wheat Flour)*
Number positive	15	9
Number negative	1	0
Percent positive	94	100
Percent negative	6	0
Consensus value	***positive***	***positive***

* Results of diverse PCR Methods (LODs positive results Lupin 0,4-10 mg/kg, Wheat 0,4-10 mg/kg)

Intended Use

- for laboratory use only, no food!
- validation of analytical methods
- control sample for quality control charts
- test material for inter-laboratory comparisons
- no medical use

Storage Instructions and Handling Information

The material should be stored as stated on page 1. Before use of the material should be warmed up to room temperature. The content should be mixed thoroughly prior to subsampling (see minimum sample size above). The material should be weighed immediately after opening of the foil pouche/bottle and closed again afterwards in order to avoid uptake of moisture. Frequent freezing and thawing should be avoided as this can lead to changes in the properties of the material. The expiry date of this RM is based on the current knowledge and applies only for proper storage conditions in the originally closed foil pouche/bottle.

Safety Precautions

The usual laboratory safety precautions should be applied when working with the RM considering the type of ingredients, parameters and its concentration.

Data Source

The material was analyzed by 27 laboratories within the related proficiency test (PT). Different analytical methods have been used.

Various

The user must determine the suitability of this RM for its particular purpose. DLA makes no warranty of any kind, expressed or implied, other than its products meet all quality control standards set by DLA. We do not guarantee this product can be used for a special application.

DLA Proficiency Tests

Datum / Date: 13 March 2025

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