PRODUCT INFORMATION SHEET

Almond, Hazelnut and Egg in Spiking Level Sample (SP)

PT originated REFERENCE MATERIAL (RM)

Description of the RM

Name / Material of related PT	*DLA ptAL06 (2024) – Allergens VI: Almond, Hazelnut and Egg in Vegetable Spread (boiled) with "Spiking Level Sample" (3 different Samples) –* ***Sample SP*** *(Spiking Level Sample)*
Identifier / LOT	*RM 2024-AL06 SP*
Expiry date	*February 2029*
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	**Sample SP** **present sample**
Boiled Vegetarian Spread (100°C, 15 min) Ingredients: tomatoes (58%), chickpeas (25%), sunflower flour, potato powder, salt (1,0%), potassium sorbate and **positive sample:** allergenic ingredients as below	100 g/100 g	99,9 g/100 g	-
Potato Powder Ingredients: Potatoes, E471, E304, E223, E100	-	-	99,9 g/100 g
Almond*, roasted, milled mixture (23 products from USA, Europe, Australia, Western Asia) – as almond* – thereof 21,1% total protein**	-	30,0 mg/kg 6,34 mg/kg	26,5 mg/kg 5,59 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***	-	31,8 mg/kg 14,9 mg/kg 8,26 mg/kg	26,5 mg/kg 12,4 mg/kg 6,88 mg/kg
Hazelnut*, roasted, ground, mixture (10 products from 5 countries, Europe) – as hazelnut* – thereof 14,1% total protein**	-	25,0 mg/kg 3,52 mg/kg	22,6 mg/kg 3,19 mg/kg
further Ingredients: Maltodextrin and silicon dioxide	-	<0,1 g/100 g	<0,1 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=5,18 for almond protein, F=6,25 for whole egg protein, and F=5,30 for hazelnut protein)

*** Protein contents according to literature values: 26,0% egg white protein

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	**Almond**		
	All Results	Method AQ*	Method RS-F**
Number of results	30	5	12
Number of outliers	-	-	-
Assigned Value (Xpt)	***21,1***	***17,6***	***21,2***
Robust standard deviation	5,67	4,97	3,20
Standard uncertainty	1,29	2,78	1,16
Target standard deviation σpt	5,27	4,39	5,30
Target range	***10,5 – 31,6***	***8,8 – 26,3***	***10,6 – 31,8***

* method AQ = AgraQuant, RomerLabs
**method RS-F= Ridascreen® Fast, R-Biopharm

Parameter	**Whole Egg Powder**			
	All Results	Method MI-II*	Method RS**	Method RS-F***
Number of results	28	5°	5	9
Number of outliers	-	1	-	-
Assigned Value (Xpt)	***27,7***	***25,4***	***23,9***	***29,6***
Robust standard deviation	5,40	3,93	6,81	4,44
Standard uncertainty	1,28	2,20	3,81	1,85
Target standard deviation σpt	6,94	6,34	5,97	7,39
Target range	***13,9 – 41,6***	***12,7 – 38,1***	***11,9 – 35,8***	***14,8 – 44,4***

* method MI-II = Morinaga Institute ELISA Kit II
** method RS = Ridascreen® Fast, R-Biopharm
*** method RS-F= Ridascreen® Fast, R-Biopharm
° without outlier

Parameter	**Hazelnut**	
	All Results	Method RS-F*
Number of results	26°	14
Number of outliers	1	-
Assigned Value (Xpt)	***20,0***	***20,1***
Robust standard deviation	4,93	3,77
Standard uncertainty	1,21	1,26
Target standard deviation σpt	4,99	5,01
Target range	***10,0 – 30,0***	***10,0 – 30,1***

*method RS-F = Ridascreen® Fast, R-Biopharm
° without outlier

Reference Values qualitative ELISA

Parameter	Almond*	Whole Egg Powder*	Hazelnut*
Number positive	30	29	28
Number negative	0	0	0
Percent positive	100	100	100
Percent negative	0	0	0
Consensus value	***positive***	***positive***	***positive***

* Results of diverse ELISA Methods (LODs positive results Almond 0,06-2,5 mg/kg, Egg 0,05-3 mg/kg, Hazelnut 0,07-2,5 mg/kg)

Reference Values qualitative PCR

Parameter	Almond*	Hazelnut*
Number positive	4	8
Number negative	1	1
Percent positive	80	89
Percent negative	20	11
Consensus value	***positive***	***positive***

* Results of diverse PCR Methods (LODs positive results Almond 1 mg/kg, Hazelnut 0,4-1 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 know-ledge 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 32 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

created	approved (PT-Coordinator)	updated
Ulrike Vorreiter	Matthias Besler-Scharf, PhD	Ulrike Vorreiter
signed U. Vorreiter	*signed M. Besler-Scharf*	*signed U. Vorreiter*
19 March 2025	19 March 2025	17 February 2026