PRODUCT INFORMATION SHEET

Crustaceae, Egg and Egg-Lysozyme (as Preservative) and Pistachio in Spicy Cheddar-Cheese-Powder (positive)

PT originated REFERENCE MATERIAL (RM)

Description of the RM

Name / Material of related PT	*DLA ptAL01 (2026) – Allergens I: Crustaceae, Egg and Egg-Lysozyme (as Preservative) and Pistachio in Spicy Cheddar-Cheese-Powder [Samples A + B] and "Spiking Level Sample" [SP] (3 different Samples) –* ***Sample B*** *(positive sample)*
Identifier / LOT	*RM 2026-AL01 B*
Expiry date	*April 2027*
Matrix	*Spicy Cheddar-Cheese-Powder*
Physical description	*Powder*
Packaging / weight	*Sealed foil pouche / 25 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** **present sample**	Sample SP
Cheddar-Cheese-Powder Ingredients: Cheese, salt, emulsifying salts: sodium phosphates, colour: paprika extract, other food additives and **positive sample:** allergenic ingredients as below Nutrients per 100 g: Fat 43 g, Carbohydrates 5,0 g, Protein 35 g, Salt 8,6 g	100 g/100 g	99,8 g/100 g	-
Potato Powder Ingredients: Potatoes, E471, E304, E223, E100	-	-	99,8 g/100 g
Crustaceae,* King prawns, freeze-dried, milled** – as crustaceae, dried* – thereof 87,0% total protein** – calculated as tropomyosin	-	 25,3 mg/kg 22,0 mg/kg 4,40 mg/kg	 26,0 mg/kg 22,6 mg/kg 4,52 mg/kg
Egg,* 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	-	 41,0 mg/kg 19,2 mg/kg 4,99 mg/kg	 42,2 mg/kg 19,8 mg/kg 5,14 mg/kg
Lysozyme Ingredients: Lysozyme from hen's egg white, freeze-dried	-	 4,89 mg/kg	 5,48 mg/kg
Pistachio,* roasted,** mixture (10 products from USA, Europe, Australia, Western Asia) – as pistachio* – *thereof 21,1% total protein	-	 25,8 mg/kg 5,44 mg/kg	 26,4 mg/kg 5,58 mg/kg
further Ingredients: Maltodextrin and silicon dioxide	-	<0,2 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=6,25 for crustaceae protein and egg protein and F=5,30 for pistachio protein)
*** Crustaceae: Calculation with approx. 20% tropomyosin in crustaceae protein, wet weight of the present King prawns is not available; Egg: contents according to literature values: 26,0% egg white protein in whole egg powder

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) and 1 - 5 g (ELISA methods), respectively.
The mixture homogeneity 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). The homogeneity tests of the parameters Crustaceae and Egg were carried out by ELISA analyzing two subsets from 10 test items (according to ISO 13528:2022 Annex B). Homogeneity was sufficient with a standard deviation between the samples Ss of ≤ 15% („heterogeneity standard deviation“) using ELISA test kits from different manufacturers, e.g. AgraQuant Allergen ELISA Romer Labs, GSD Allergen ELISA Gold Standard Diagnostics Kassel, Morinaga Food Allergen ELISA Kits Morinaga BioScience, Inc. (for more details see final report of PT).

Reference Values
All reference values were derived from the related ISO 17043 accredited PT round (for more details see final report).

Reference Values quantitative in mg/kg ELISA

Parameter	**Crustaceae (as Total Protein)**		**Crustaceae (as Tropomyosin)**
	All Results*	Method RS-E**	All Results* (Info)
Number of results	6°	5°	5
Number of outliers	1	1	-
Assigned Value (Xpt)	***17,0***	***14,3***	***0,463***
Robust standard deviation	4,09	2,86	0,290
Standard uncertainty	2,09	1,60	0,162
Target standard deviation σpt	4,26	3,58	0,116
Target range	***8,51 – 25,5***	***7,16 – 21,5***	***0,232 – 0,695***

* ELISA Method: diverse Methods
** ELISA Method: RS-E = Ridascreen® Easy, R-Biopharm
° without outlier
(Info): for information only

Parameter	**Egg (as Whole Egg Powder)**			
	“Peak 51” *	Method MI-II**	Method RS***	Method RS-F****
Number of results	20°	5	5	7
Number of outliers	1	-	-	-
Assigned Value (Xpt)	***50,6***	***27,2***	***47,6***	***46,8***
Robust standard deviation	11,0	9,84	11,6	5,20
Standard uncertainty	3,09	5,50	6,46	2,46
Target standard deviation σpt	12,7	6,81	11,9	11,7
Target range	***25,3 – 76,0***	***13,6 – 40,9***	***23,8 – 71,4***	***23,4 – 70,2***

* ELISA Methods “Peak 51”: AQ = AgraQuant, RomerLabs, AQ-P = AgraQuant Plus, RomerLabs, AQ-PR = AgraQuant Pro, RomerLabs, ES = ELISA-Systems, GSD = ELISA, Gold Standard Diagnostics, Kassel, IFP = ELISA-Fast, ifp, SP = SensiSpec ELISA Kit, Gold Standard Diagnostics
** ELISA Method: MI-II = Morinaga BioScience ELISA Kit II
*** ELISA Method: RS = Ridascreen®, R-Biopharm
**** ELISA Method: RS-F= Ridascreen® Fast, R-Biopharm
° without outlier

Parameter	**Egg-Lysozyme**	**Pistachio**	
	Method RS-F* (Info)	“Group 1” **	Method BF***
Number of results	4	11°	5
Number of outliers	-	1	-
Assigned Value (Xpt)	***4,43***	***17,5***	***5,42***
Robust standard deviation	1,29	7,11	1,34
Standard uncertainty	0,809	2,68	0,751
Target standard deviation σpt	1,11	4,37	1,36
Target range	***2,22 – 6,65***	***8,74 – 26,2***	***2,71 – 8,13***

* ELISA Method: RS-F = Ridascreen® Fast, R-Biopharm
(Info): for information only
** ELISA Methods “Group 1”: 3M = 3M Protein ELISA Kit, Neogen, AQ = AgraQuant, RomerLabs, AQ-P = AgraQuant Plus, RomerLabs, BC = BioCheck ELISA, GSD = ELISA, Gold Standard Diagnostics, Kassel, SP = SensiSpec ELISA Kit, Gold Standard Diagnostics
*** ELISA Method: BF = MonoTrace ELISA, BioFront Technologies
° without outlier

Reference Values qualitative ELISA

Parameter	**Crustaceae (as Total Protein)***	**Crustaceae (as Tropomyosin)***	**Egg (as Whole Egg Powder)***	**Egg-Lysozyme***	**Pistachio***
Number positive	8	5	27	5	17
Number negative	0	0	0	0	0
Percent positive	100	100	100	100	100
Percent negative	0	0	0	0	0
Consensus value	***positive***	***positive***	***positive***	***positive***	***positive***

* Results of diverse ELISA Methods (LODs are in the common range of the applied ELISA Testkits, for specific values see final report)

Reference Values qualitative PCR

Parameter	**Crustaceae***	**Pistachio***
Number positive	9	9
Number negative	0	0
Percent positive	100	100
Percent negative	0	0
Consensus value	***positive***	***positive***

* Results of diverse PCR Methods (LODs are in the common range of the applied PCR Methods, for specific values see final report)

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, 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 29 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.

created	approved (PT-Coordinator)	updated
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signed U. Vorreiter	*signed M. Besler-Scharf*	-
17 June 2026	19 June 2026	-