

PRODUCT INFORMATION SHEET

Celery, Pistachio and Milk (Casein) in Boiled Sausage (positive)

PT originated REFERENCE MATERIAL (RM)

Description of the RM

Name / Material of related PT	DLA ptAL01 (2024) – Allergens I: Celery, Pistachio and Milk (Casein) in Boiled Sausage with "Spiking Level Sample" (3 different Samples) – Sample A (positive sample)
Identifier / LOT	RM 2024-AL01 A
Expiry date	June 2028
Matrix	Boiled sausage
Physical description	Solid paste-like
Packaging / weight	Screw-cap jars / 25 g
Storage conditions	frozen < -18°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 present sample	Sample B	SP Sample
Boiled Sausage (100°C, 60 min) Ingredients: Minced meat (beef and pork) 70%, water 25%, pork gelatine 3,5%, salt 0,3%, sorbic acid, and positive sample: allergenic ingredients as below	99,5 g/100 g	100 g/100 g	-
Potato Powder Ingredients: Potatoes, E471, E304, E223, E100	-	-	99,9 g/100 g
Celery seeds, ground, mixture of 8 products (Europe, Asia) – as celery* – thereof 19,4% total protein**	86,3 mg/kg 16,8 mg/kg	-	27,2 mg/kg 5,29 mg/kg
Pistachio, roasted, milled mixture (10 products from USA, Iran, Turkey, Greece, Italy, Spain) – as pistachio* – thereof 21,1% total protein**	124 mg/kg 26,2 mg/kg	-	21,6 mg/kg 4,55 mg/kg
Skimmed milk powder mixture (9 products from Europe, USA) – as skimmed milk powder* – thereof 33,0% total protein** – thereof casein*** – thereof β -lactoglobulin***	113 mg/kg 37,1 mg/kg 29,7 mg/kg 3,71 mg/kg	-	50,5 mg/kg 16,7 mg/kg 13,3 mg/kg 1,67 mg/kg
<i>further Ingredients: Maltodextrin and silicon dioxide</i>	<0,5 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 celery protein, F=5,30 for pistachio protein, and F=6,38 for milk protein)

*** Protein contents according to literature values (approx. 80% casein and 10% β -lactoglobulin in total milk 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 1 - 5 g (ELISA methods), respectively.

The homogeneity tests of the parameters Pistachio and Milk were carried out by ELISA analyzing two subsets from 10 test items (according to ISO 13528:2015 Annex B). Homogeneity was sufficient with a standard deviation between the samples S_s of $\leq 15\%$ („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 MloBS, Veratox ELISA for Food Allergens Neogen (for more details see final report of PT).

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	Pistachio
	All Results *
Number of results	9
Number of outliers	-
Assigned Value (Xpt)	1,70
Robust standard deviation	0,539
Standard uncertainty	0,225
Target standard deviation opt	0,426
Target range	0,851 – 2,55

* ELISA Methods: AQ = AgraQuant, RomerLabs / BC = BioCheck ELISA / GSD = Gold Standard Diagnostics, Kassel / SP = SensiSpec ELISA, Gold Standard Diagnostics

Parameter	Total Milk Protein			
	Results Group 1	Results Group 2	Method RS-FC*	Method RS-FM*
Number of results	14	10	6	7
Number of outliers	-	-	-	-
Assigned Value (Xpt)	3,49	11,9	8,97	11,8
Robust standard deviation	2,28	1,95	3,99	2,96
Standard uncertainty	0,763	0,770	2,03	1,05
Target standard deviation opt	0,874	2,96	2,24	2,96
Target range	1,75 – 5,24	5,93 – 17,8	4,49 – 13,5	5,92 – 17,8

ELISA Methods

Group 1: AQ-C = AgraQuant Casein, RomerLabs / AQ-M = AgraQuant Milk, RomerLabs / BM = AlerTox ELISA, Biomedal / GSD-C = ELISA Casein, Gold Standard Diagnostics, Kassel / IFP-C = ELISA-Fast Casein, ifp / IFP-M = ELISA-Fast Milk, ifp / SP-C = SensiSpec ELISA Casein, Gold Standard Diagnostics / SP-M = SensiSpec ELISA Milk, Gold Standard Diagnostics / VT = Veratox, Neogen

Group 2: ES = ELISA-Systems / MI-I-C = Morinaga Casein ELISA Kit I / MI-I-M = Morinaga Total Milk ELISA Kit I / RS-FM = Ridascreen® FAST Milk, R-Biopharm

* RS-FC= Ridascreen® Fast Casein, R-Biopharm

** RS-FM= Ridascreen® Fast Milk, R-Biopharm

Reference Values qualitative ELISA

Parameter	Pistachio*	Total Milk Protein*
Number positive	10	34
Number negative	4	0
Percent positive	71	100
Percent negative	29	0
Consensus value	none**	positive

* Results of diverse ELISA Methods (LODs positive results Pistachio 0,07-1,0 mg/kg, Total Milk Protein 0,05-1,0 mg/kg)

** For pistachio, no consensus value with at least 75% concurring results was obtained for the various ELISA methods. While 100% positive results were obtained for the results of methods AQ, AS, BC, GSD and SP, the results for all other methods were at or below the respective limit of quantification (see final report).

Reference Values qualitative PCR

Parameter	Celery*	Pistachio*
Number positive	24	10
Number negative	0	1
Percent positive	100	91
Percent negative	0	9
Consensus value	positive	positive

* Results of diverse PCR Methods (LODs positive results of most of the participants Celery 0,1-10 mg/kg, Pistachio 0,4-4,0 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 poche/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 poche/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 31 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.



Datum / Date: 14 May 2025

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