

PRODUCT INFORMATION SHEET
Almond, Brazil Nut, Pecan and Buckwheat
in Cereal Muesli (positive)
PT originated REFERENCE MATERIAL (RM)

Description of the RM

Name / Material of related PT	DLA ptAL08 (2023) – Allergens VIII: Almond, Brazil Nut, Pecan and Buckwheat in Cereal Muesli with "Spiking Level Sample" (3 different Samples) – Sample A (positive sample)
Identifier / LOT	RM 2023-AL08 A
Expiry date	April 2028
Matrix	Cereal Muesli
Physical description	Powder
Packaging / weight	Sealed foil poche / 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 present sample	Sample B	Sample SP
Muesli Crunchy with Fruits Ingredients: Whole grain oat flakes, sugar, sunflower oil, rice extrudate (rice flour, barley malt flour), puffed wheat, black currant juice concentrate, freeze-dried berries (raspberries, strawberries, blackberries), dates, red currants, rice syrup, coconut, salt, beetroot juice concentrate, and positive sample: allergenic ingredients as below	99,8 g/100 g	100 g/100 g	-
Potato Powder Ingredients: Potatoes, E471, E304, E223, E100	-	-	99,8 g/100 g
Almond, roasted, milled mixture (23 products from USA, Europe, Australia, Western Asia) – as almond* – thereof 21,1% total protein**	20,2 mg/kg 4,27 mg/kg	-	20,2 mg/kg 4,27 mg/kg
Brazil Nut, milled – as brazil nut* – thereof 12,9% total protein**	18,4 mg/kg 2,38 mg/kg	-	18,2 mg/kg 2,35 mg/kg
Pecan, raw, milled mixture (8 products from USA, Mexico and unknown) – as pecan* – thereof 9,86% total protein**	21,1 mg/kg 2,08 mg/kg	-	20,9 mg/kg 2,06 mg/kg
Buckwheat, milled mixture (6 products from Europe, Asia) – as buckwheat* – thereof 12,2% total protein**	22,3 mg/kg 2,71 mg/kg	-	18,3 mg/kg 2,23 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=5,18 for almond protein, F= 5,46 for brazil nut protein, F=5,3 for pecan protein and F=6,25 for buckwheat 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) and 1 - 5 g (ELISA methods), respectively.

The mixture homogeneity was examined 10-fold by microtracer analysis. Homogeneity was sufficient with a probability of $\geq 25\%$ (excellent mixture) and a HorRat value in the range of acceptance (0,3 to 1,3). The homogeneity tests of the parameters 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 MIOBS, 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	Almond		
	All Results (Info)	Other Methods*	Method RS-F**
Number of results	16°	9°	7
Number of outliers	1	1	0
Assigned Value (Xpt)	12,8	10,1	16,6
Robust standard deviation	4,22	1,82	4,18
Standard uncertainty	1,32	0,759	1,98
Target standard deviation σ_{pt}	3,20	2,52	4,16
Target range	6,40 – 19,2	5,05 – 15,1	8,32 – 25,0

* ELISA Method: other Methods = all except RS-F

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

° without outlier / (Info): for information only

Parameter	Brazil Nut		Pecan Nut
	All Results (Info)	Other Methods*	Other Methods**
Number of results	9°	6°	8°
Number of outliers	1	1	1
Assigned Value (Xpt)	22,2	16,1	28,9
Robust standard deviation	11,2	2,01	7,56
Standard uncertainty	4,67	1,02	3,34
Target standard deviation σ_{pt}	5,56	4,01	7,22
Target range	11,1 – 33,4	8,03 – 24,1	14,4 – 43,3

* ELISA Method: other Methods = all except BF (MonoTrace ELISA, BioFront Technologies)

** ELISA Method: other Methods = all except 3M (3M Protein ELISA Kit)

° without outlier / (Info): for information only

Reference Values qualitative ELISA

Parameter	Almond*	Brazil Nut*	Pecan*	Buckwheat*
Number positive	17	11	12	1
Number negative	0	0	0	0
Percent positive	100	100	100	100
Percent negative	0	0	0	0
Consensus value	positive	positive	positive	-**

* Results of diverse ELISA Methods (LODs positive results Almond 0,1-2,5 mg/kg, Brazil Nut 0,2-4 mg/kg, Pecan 1,0-2,0 mg/kg, Buckwheat 1 mg/kg)

** The results are in qualitative agreement with the spiking of sample A.

Reference Values qualitative PCR

Parameter	Almond*	Brazil Nut*	Pecan*	Buckwheat*
Number positive	5	5	6	3
Number negative	0	0	0	0
Percent positive	100	100	100	100
Percent negative	0	0	0	0
Consensus value	positive	positive	positive	positive

* Results of diverse PCR Methods (LODs positive results Almond 0,4-0,8 mg/kg, Brazil Nut 0,4 mg/kg, Pecan 0,4-1,0 mg/kg, Buckwheat 0,4 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 17 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 April 2025

Ulrike Vorreiter
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