PRODUCT INFORMATION SHEET

Response PT Peanut: 5 processed Samples Peanut (unroasted), Peanut Butter, Peanut Paste and Extrudate (Peanut Puffs)

PT originated REFERENCE MATERIAL (RM)

Description of the RM

Name / Material of related PT	*DLA ptALR1 (2021) Peanut: 5 processed Samples Peanut (unroasted), Peanut Butter, Peanut Paste and Extrudate (Peanut Puffs) in Potato Powder Matrix (and a "blank sample")*
Identifier / LOT	*RM 2021-ALR1 Set*
Expiry date	*April 2027*
Matrix	*Potato Powder*
Physical description	*Powder*
Packaging / weight	*Sealed foil pouche / 20 g*
Storage conditions	*room temperature, long term cooled 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

PT-Sample series	**Sample 1** **Peanut Butter**	**Sample 2** **Peanuts, roasted**	**Sample 3** **Peanuts, unroasted**	**Sample 4** **Peanut Paste**	**Sample 5** **Peanut Extrudate**	**Sample 6** **„blank“**
Ingredients	**g/100 g**	**g/100g**	**g/100g**	**g/100g**	**g/100g**	**g/100g**
Potato powder Ingredients: potato, E471, E304, E223, E100 Nutrients per 100 g: Protein 8,3 g, carbohydrates 76 g, fat 0,6 g, salt 0,15 g	75	75	75	75	75	75
Maltodextrin	25	25	25	25	25	25
Allergen-Premixes Ingredients: maltodextrin (75% - 90%), sodium sulfate (< 5%), silicon dioxide (< 2,5%), processed allergen products (each 1,6% - 5% dry weight)	0,047	0,040	0,041	0,11	0,13	-
Allergen-Contents	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
*Peanut butter** (90% Peanut and other ingredients) Protein 21,7% ** *(6 products from USA*	23,4	-	-	-	-	-
*Peanuts, roasted** Protein 23,2% ** (18 products from USA, Asia, Africa and South America)	-	19,9	-	-	-	-
*Peanuts, unroasted** Protein 23,1% ** *(9 products from Africa, Asia, South America)*	-	-	20,5	-	-	-
*Peanut paste** (36% Peanut and other ingredients) Total protein 11,0% ** *(5 products seasoning sauces from Asia or asian style)*	-	-	-	55,8	-	-
*Peanut Extrudate** (32% Peanut and other ingredients) Total protein 11,2% ** *(7 products peanut puffs from Europe and USA)*	-	-	-	-	65,9	-
– *thereof Peanut*	21,1	19,9	20,5	20,1	21,1	-
Extended combined uncertainty (k=2) of peanut-content (= ± 12 %)	± 2,53	± 2,34	± 2,46	± 2,41	± 2,53	-

*Allergen contents as „total food“ as described in column ingredients according to gravimetric mixture
** Protein contents according to laboratory analysis of raw material mixtures (total nitrogen according to Kjeldahl with F=5,46 for peanut protein)

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

Minimum Sample Size

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 before bottling was examined 8-fold by microtracer analysis. Homogeneity was sufficient with probabilities of ≥ 25% (excellent mixtures) and HorRat values in or slightly above the range of acceptance (0,3 to 1,3) (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 qualitative ELISA

Evaluation number	Sample 1 Peanut Butter	Sample 2 Peanuts, roasted	Sample 3 Peanuts, unroasted	Sample 4 Peanut Paste	Sample 5 Peanut Extrudate	Sample 6 „blank“
	pos/neg	pos/neg	pos/neg	pos/neg	pos/neg	pos/neg
Number positive	8	8	8	8	8	0
Number negative	0	0	0	0	0	8
Percent positive	100	100	100	100	100	0
Percent negative	0	0	0	0	0	100
Consensus value	positive	positive	positive	positive	positive	negative
Spiking	positive	positive	positive	positive	positive	negative

Methods:

BK = BioKits, Neogen
MI-II = Morinaga Institute ELISA Kit II
RS = Ridascreen®, R-Biopharm
RS-F= Ridascreen® Fast, R-Biopharm
SP = SensiSpec ELISA Kit, Eurofins
VT = Veratox, Neogen

Note: For all processed hazelnut products (samples 1 to 5) positive consensus values were obtained by the ELISA-methods.

Reference Values qualitative PCR

Evaluation number	Sample 1 Peanut Butter	Sample 2 Peanuts, roasted	Sample 3 Peanuts, unroasted	Sample 4 Peanut Paste	Sample 5 Peanut Extrudate	Sample 6 „blank“
	pos/neg	pos/neg	pos/neg	pos/neg	pos/neg	pos/neg
Number positivee	6	6	6	6	6	0
Number negativee	0	0	0	0	0	6
Percent positivee	100	100	100	100	100	0
Percent negativee	0	0	0	0	0	100
Consensus value	positive	positive	positive	positive	positive	negative
Spiking	positive	positive	positive	positive	positive	negative

Methods

ASU = ASU §64 Methode/method
SFA = Sure Food ALLERGEN, R-Biopharm / Congen
div = keine genaue Angabe / andere Methode
div = not indicated / other method

Note: For all samples 1-5 consensus values of 100% positive results were obtained by PCR-methods. Two participants reported a qualitatively lower response for samples 4 or 4 and 5 (peanut paste and peanut extrudate) (“at LOD” or “weakly positive”).

Reference Values quantitative ELISA

With one exception, for the samples 1 (peanut butter), 2 (peanuts, roasted) and 3 (peanuts, unroasted) none of the recovery rates of the participant results were in the range of acceptance of 50-150%.
Clearly higher values were predominatly obtained. The recovery rate of method MI for sample 1 was within the range of acceptance. For samples 4 (peanut paste) and 5 (peanut extrudate), 75% and 63% of the recovery rates of the participant results were in the range of acceptance of 50-150%. The other recoveries were below 50%. For more details see final report and dot-plot presentation of samples 1-5 on the following pages.

Reference Values quantitative PCR

No quantitative results were submitted for the PCR methods.

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

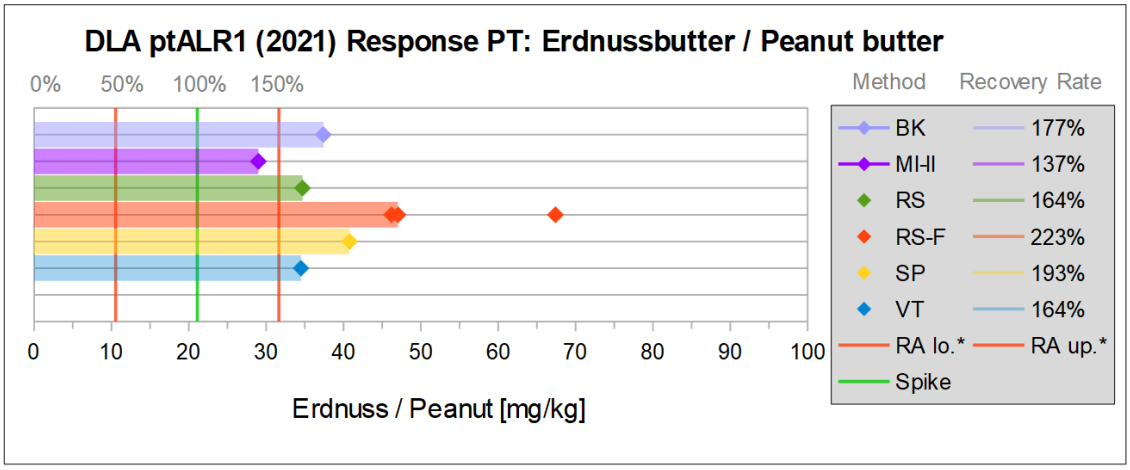
Storage Instructions and Handling Information
The material should be stored as stated on page 1. Before use of the material should be warmed up to room temperature. The content should be mixed thoroughly prior to subsampling (see minimum sample size above). The material should be weighed immediately 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.

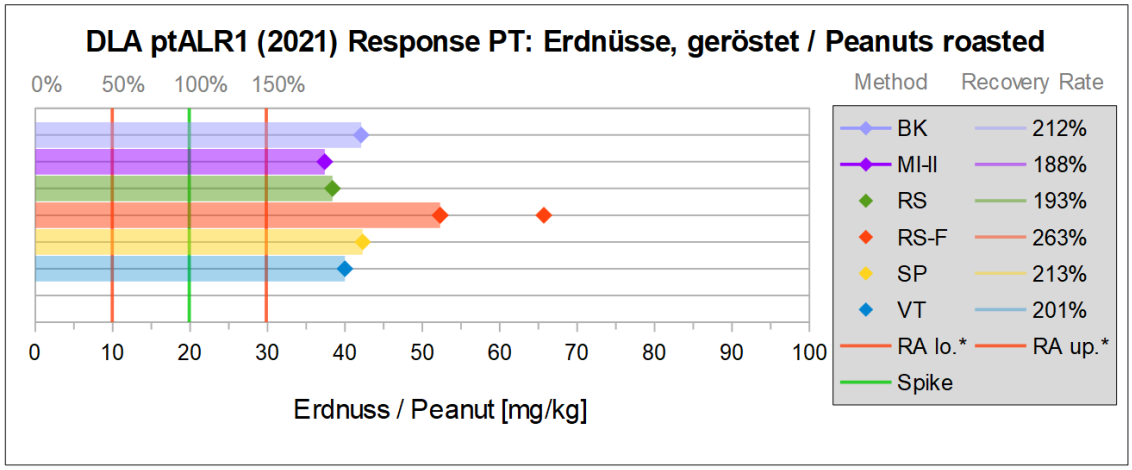
Safety Precautions
The usual laboratory safety precautions should be applied when working with the RM considering the type of ingredients, parameters and its concentration.

Data Source
The material was analyzed by 13 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.

Median of recovery rates (for information only)





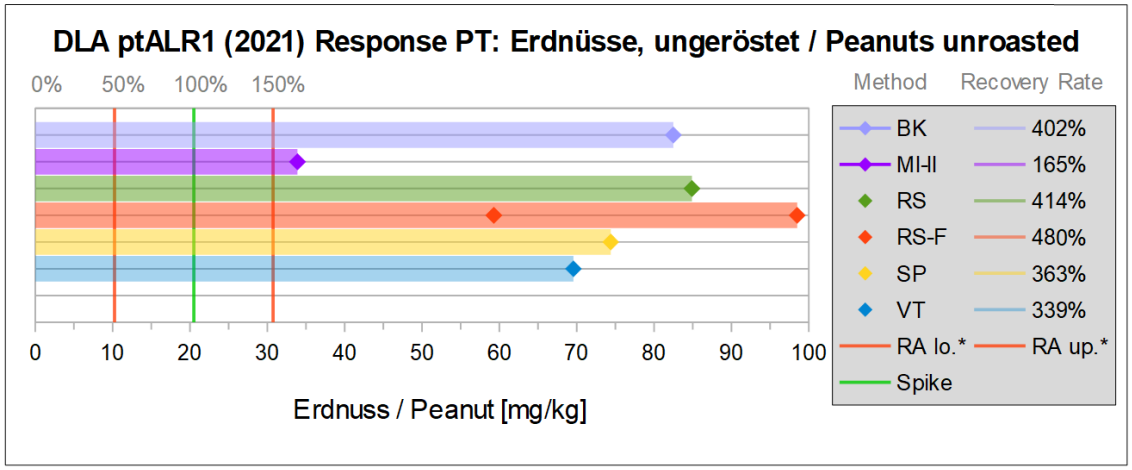
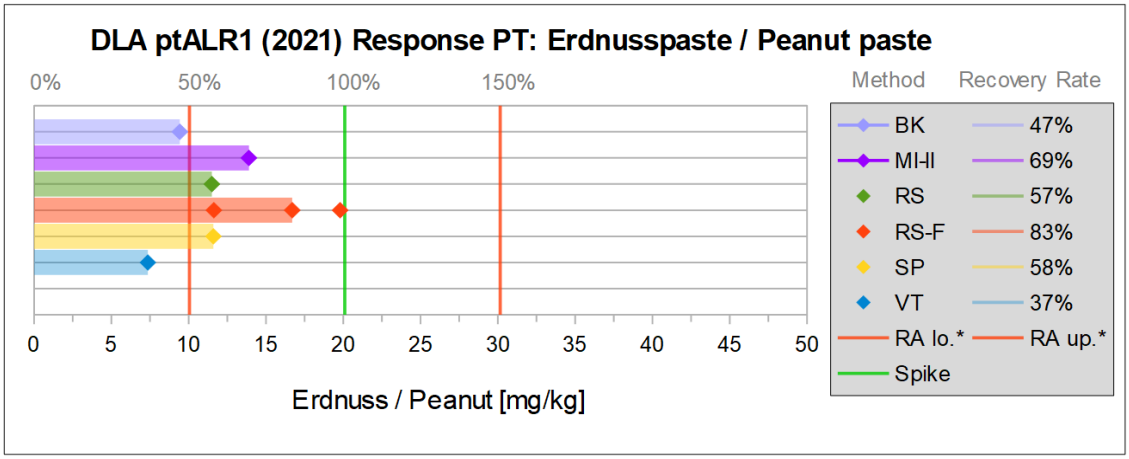


Fig. 1: Peanut Allergen Recovery Rates (ELISA methods) - Dot plot of single results (Samples 1-3 separated according to methods with indication of the median recovery rate), lower scale content in mg/kg, upper scale recovery rate in % with * acceptance range of 50% - 150% (* range of acceptance: RA lower limit to RA upper limit)



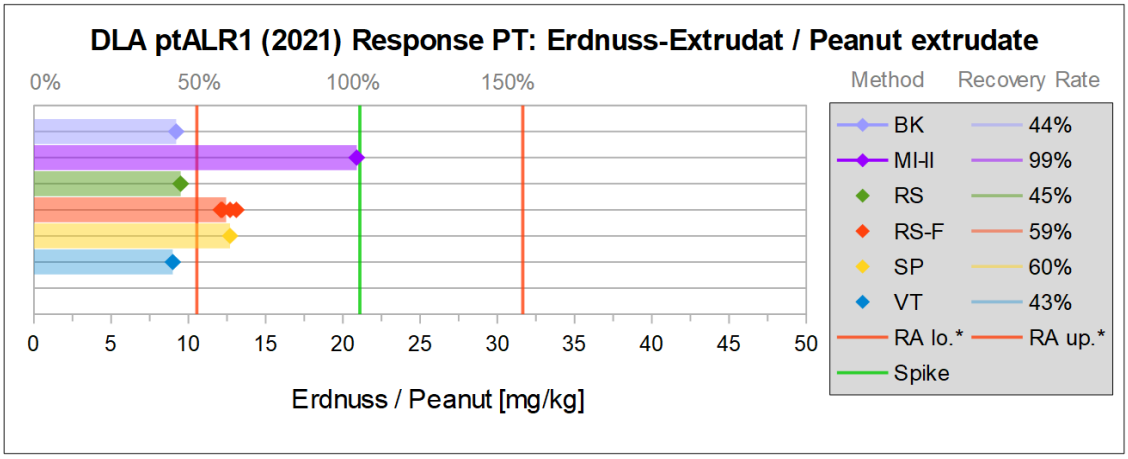


Fig. 2: Peanut Allergen Recovery Rates (ELISA methods) - Dot plot of single results (Samples 4-5 separated according to methods with indication of the median recovery rate), lower scale content in mg/kg, upper scale recovery rate in % with * acceptance range of 50% - 150% (* range of acceptance: RA lower limit to RA upper limit)

approved (PT-Coordinator)	updated
Matthias Besler-Scharf, PhD	Ulrike Vorreiter
signed M. Besler-Scharf	*signed U. Vorreiter*
30 May 2024	4 May 2026