PRODUCT INFORMATION SHEET

ALM Verification: Egg in Cookie-Matrix
5 Samples baked with Whole Egg Powder
(levels: 0,1 / 0,5 / 1,0 / 5,0 / 15 mg/kg)

PT originated REFERENCE MATERIAL (RM)

Description of the RM

Name / Material of related PT	*DLA 17-2019 ALM-Verification: Egg in Cookie-Matrix, 5 Samples baked with Whole Egg Powder*
Identifier / LOT	*RM 2019-17 Set*
Expiry date	*March 2027*
Matrix	*Cookies, see table*
Physical description	*Powder*
Packaging / weight	*Sealed foil pouche / 20 g*
Storage conditions	*2 - 10°C, long term < -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

PT-Sample series	**Level 0** **„blank“**	**Level 1** **0,10 mg/kg**	**Level 2** **0,50 mg/kg**	**Level 3** **1,0 mg/kg**	**Level 4** **5,0 mg/kg**	**Level 5** **15 mg/kg**
Ingredients	**g/100 g**	**g/100g**	**g/100g**	**g/100g**	**g/100g**	**g/100g**
Butter Cookies Ingredients: Wheat flour, sugar, butter, barley malt extract, skimmed milk powder, glucose, glucose syrup, raising agent ammonium carbonate, salt, emulsifier lecithin Nutrients per 100 g: Fat 12 g, carbohydrates 76 g, protein 7,1 g	100	>99,9	>99,9	>99,9	>99,9	99,8
Cookies (baked 150°C, 40 min) Ingredients: Wheat flour, Sugar, butter, water, mixture of whole egg powders, salt	-	0,002	0,008	0,017	0,083	0,25
Allergen-Contents	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
thereof Egg: – as Whole Egg Powder* – *with 46,9% protein***	-	**0,101** 0,047	**0,506** 0,237	**1,01** 0,474	**5,04** 2,36	**15,1** 7,08
Extended combined uncertainty (k=2) of egg content (= ± 11 %)		± 0,011	± 0,056	± 0,11	± 0,55	± 1,7

*Allergen contents as „total food“ as described in column ingredients according to gravimetric mixture
** Protein contents according to laboratory analysis of raw material (total nitrogen according to Kjeldahl with F=6,25 for egg protein)

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 a probability of ≥ 25% (excellent mixture) and a HorRat value in 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 proficiency test (PT) round (for more details see final report).

Reference Values qualitative ELISA

	Level 0 „blank“	Level 1 0,10 mg/kg	Level 2 0,50 mg/kg	Level 3 (Action Level) 1,0 mg/kg	Level 4 5,0 mg/kg	Level 5 15 mg/kg
Number positive	2	0	2	2	6	7
Number negative	13	15	13	13	9	8
Percent positive	13	0	13	13	40	47
Percent negative	87	100	87	87	60	53
Consensus value	negative	negative	negative	negative	none	none
Spiking	negative	positive	positive	positive	positive	positive

Methods:

AQ = AgraQuant, RomerLabs
AQ-P = AgraQuant Plus, RomerLabs
BK = BioKits, Neogen
MI-II = Morinaga Institute ELISA II
RS = Ridascreen®, R-Biopharm
RS-F= Ridascreen® Fast, R-Biopharm
VT = Veratox, Neogen

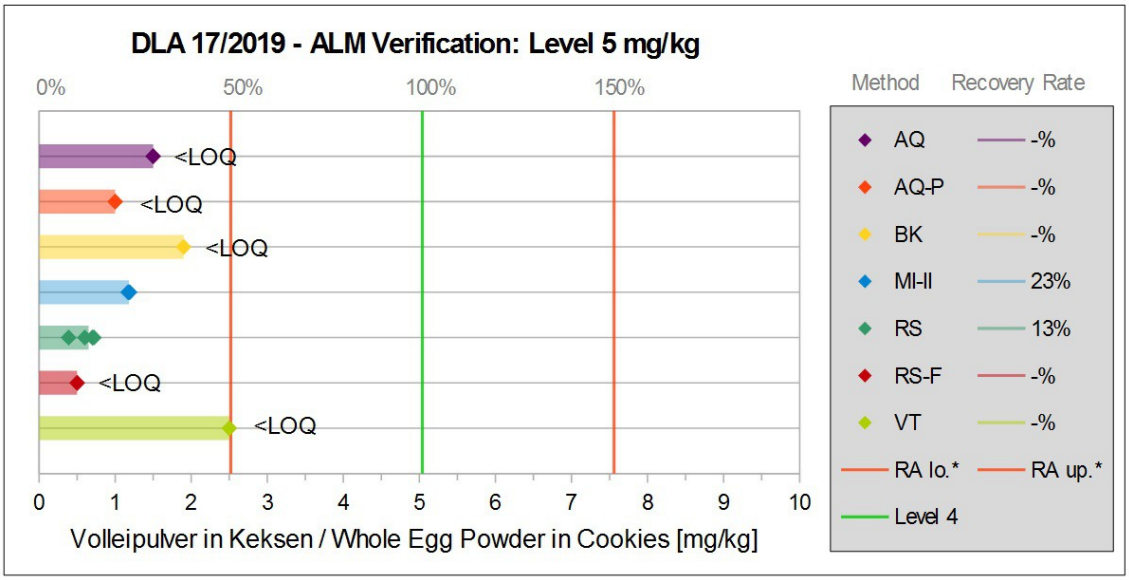
Comments:
The highest levels 4 (5 mg/kg) and 5 (15 mg/kg) were successfully detected by the participants with the methods MI-II and RS. The action level 3 was detected as positive by two participants with the method RS (both results were at or below the limit of quantification of the method).
With the other ELISA methods no (plausible) positive results were obtained for any of the 5 levels.

Reference Values quantitative in mg/kg ELISA

Parameter	Egg (as whole egg powder)
	Level 4 (5,0 mg/kg)
	two methods*
Numbers of results	6
Number of outliers	0
Assigned Value (Xpt)	***0,795***
Robust standard deviation	0,364
Standard uncertainty	0,186
Target standard deviation σpt	0,199
Target range	***0,397 – 1,19***

* methods MI-II and RS

Median of recovery rates: levels 4 and 5



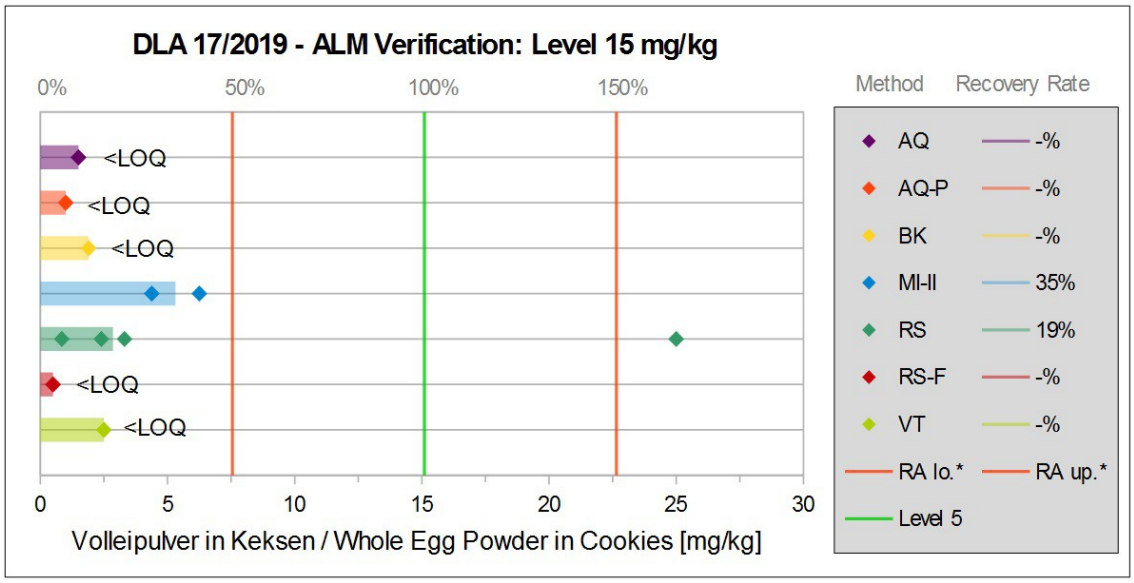


Abb./Fig. 1: Graphs of single results (Level 4+5) separated by methods with corresponding mean recovery rates, lower scale egg content as whole egg powder in mg/kg, upper scale recovery rate in % with * range of acceptance from 50% - 150% (* range of acceptance: RA lower limit to RA upper limit)

Intended Use

- for laboratory use only, no food!
- validation of analytical methods
- control sample for quality control charts
- test material for inter-laboratory comparisons

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 11 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.

approved (PT-Coordinator)	updated
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signed M. Besler-Scharf	*signed U. Vorreiter*
3 June 2024	2 April 2026