

PRODUCT INFORMATION SHEET

p-35S, t-NOS, CP4 EPSPS, PAT, BAR, Cry1Ab/Ac / GMO-Maize (Bt11, MIR604 and Bt176)

PT originated REFERENCE MATERIAL (RM)

Description of the RM

Name / Material of related PT	<i>DLA ptGMS1 (2024) GMO-Screening I: 5 Samples with positive/negative amounts of p-35S, t-NOS, p-FMV, CP4 EPSPS, PAT, BAR, Cry1Ab/Ac / GMO-Maize (Bt11, MIR604 and Bt176) and GMO-Soya (RR GTS 40-3-2, RR2 MON89788)</i>
Identifier / LOT	<i>RM 2024-GMS1 Sample 1</i>
Expiry date	<i>July 2028</i>
Matrix	<i>See tables</i>
Physical description	<i>Powder</i>
Packaging / weight	<i>Sealed foile poche / 10 g</i>
Storage conditions	<i>2-10°C, long term 2-10°C (dry and dark)</i>
Name and address manufacturer	DLA - Proficiency Tests GmbH <i>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</i>

Composition of Material

DLA-Sample	Ingredients (per 100 g)	GMO-Content Maize	GMO-Content Soya
1 (present sample)	Wheat flour Typ 405 (80 g) Ingredients: Wheat Nutrients per 100 g: Protein 11 g, Carbohydrates 72 g, Fat 1,1 g Maize Semolina European Supplier (13 g) Ingredients: Maize semolina Nutrients per 100 g: Protein 7,5 g, Carbohydrates 74 g, Fat 1 g Maize flour, USA Supplier (6,6 g) Ingredients: Maize flour Nutrients per 100 g: Protein 9 g, Carbohydrates 79 g, Fat 0 g GMO Maize Bt176 (0,32 g) Reference material: 100% GMO-Maize	– – positive (GMO-Maize experimental) positive (Bt176 added)	– – – –
2	Wheat flour Typ 405 (80 g) Ingredients: Wheat Nutrients per 100 g: Protein 10 g, Carbohydrates 74 g, Fat 1 g Maize Semolina European Supplier (10 g) Ingredients: Maize semolina Nutrients per 100 g: Protein 7,5 g, Carbohydrates 74 g, Fat 1 g Soya flour, European Supplier (10 g) Ingredients: Soya flour toasted Nutrients per 100 g: Protein 37 g	– – –	– – –
3	Wheat flour Typ 405 (90 g) Ingredients: Wheat	–	–

DLA-Sample	Ingredients (per 100 g)	GMO-Content Maize	GMO-Content Soya
	Nutrients per 100 g: Protein 10 g, Carbohydrates 74 g, Fat 1 g Soya flour, European Supplier (7,5 g) Ingredients: Soya flour toasted Nutrients per 100 g: Protein 37 g Soya Chunks, USA-Supplier (2,5 g) Ingredients: Soybean Flour Nutrients per 100 g: Protein 47 g, Carbohydrates 17 g, Fat 0,8 g	–	–
4	Wheat flour Typ 405 (80 g) Ingredients: Wheat Nutrients per 100 g: Protein 11 g, Carbohydrates 72 g, Fat 1,1 g Soya flour, European Supplier (15 g) Ingredients: Soya flour toasted Nutrients per 100 g: Protein 37 g Soybeans, Asian Supplier (5,0 g) Ingredients: Soybeans (ground)	–	–
5	Wheat flour Typ 405 (100 g) Ingredients: Wheat Nutrients per 100 g: Protein 11 g, Carbohydrates 72 g, Fat 1,1 g	–	–

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

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 10-fold by microtracer analysis for samples 1-4. Homogeneity was sufficient with a probability of $\geq 75\%$ (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: p-35S-Screening-Sequence

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	31	2	31	28	0
Number negative	0	29	0	3	31
Percent positive	100	6	100	90	0
Percent negative	0	94	0	10	100
Consensus value	positive	negative	positive	positive	negative
Spiking	positive	negative	positive	positive	negative

Reference Values qualitative: t-NOS-Screening-Sequence

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	31	1	31	29	1
Number negative	0	30	0	2	30
Percent positive	100	3	100	94	3
Percent negative	0	97	0	6	97
Consensus value	positive	negative	positive	positive	negative
Spiking	positive	negative	positive	positive	negative

Reference Values qualitative: p-FMV-Screening-Sequence

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	0	0	25	29	0
Number negative	29	29	4	0	29
Percent positive	0	0	86	100	0
Percent negative	100	100	14	0	100
Consensus value	negative	negative	positive	positive	negative
Spiking	negative	negative	positive	positive	negative

Reference Values qualitative: CTP2-CP4 EPSPS-Screening-Sequence

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	17	0	17	17	0
Number negative	1	18	1	1	18
Percent positive	94	0	94	94	0
Percent negative	6	100	6	6	100
Consensus value	positive	negative	positive	positive	negative
Spiking	positive	negative	positive	positive	negative

Reference Values qualitative: PAT-Screening-Sequence

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	18	0	11	10	0
Number negative	0	18	7	8	18
Percent positive	100	0	61	56	0
Percent negative	0	100	39	44	100
Consensus value	positive	negative	none	none	negative
Spiking	positive	negative	traces	traces	negative

No consensus values with $\geq 75\%$ positive or negative results were obtained for samples 3 and 4. The samples contain small amounts (traces) of the GMO soya event A2704-12, which harbours both the 35S promoter sequence of the cauliflower mosaic virus and the phosphinothricin N-acetyltransferase gene (*pat*). The two samples were not considered for evaluation.

Reference Values qualitative: BAR-Screening-Sequence

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	18	0	0	0	0
Number negative	0	18	18	18	18
Percent positive	100	0	0	0	0
Percent negative	0	100	100	100	100
Consensus value	positive	negative	negative	negative	negative
Spiking	positive	negative	negative	negative	negative

Reference Values qualitative: Cry1Ab/Ac-Screening-Sequence

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	10	0	0	0	0
Number negative	0	10	10	10	10
Percent positive	100	0	0	0	0
Percent negative	0	100	100	100	100
Consensus value	positive	negative	negative	negative	negative
Spiking	positive	negative	negative	negative	negative

Reference Values qualitative: GMO-Maize Bt11

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	10	0	0	0	0
Number negative	1	11	11	11	11
Percent positive	91	0	0	0	0
Percent negative	9	100	100	100	100
Consensus value	positive	negative	negative	negative	negative
Spiking	positive	negative	negative	negative	negative

For the samples 1 - 5 consensus values with four times 100% and once 91% positive or negative results were obtained, respectively. The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).

Reference Values qualitative: GMO-Maize MIR604

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	7	0	0	0	0
Number negative	0	7	7	7	7
Percent positive	100	0	0	0	0
Percent negative	0	100	100	100	100
Consensus value	positive	negative	negative	negative	negative
Spiking	positive	negative	negative	negative	negative

For the samples 1 - 5 consensus values with 100% positive or negative results were obtained, respectively. The consensus values are in agreement with the addition of the GMO-containing ingredients (spiking).

Reference Values qualitative: GMO-Maize Bt176

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	10	0	0	0	0
Number negative	0	10	10	10	10
Percent positive	100	0	0	0	0
Percent negative	0	100	100	100	100
Consensus value	positive	negative	negative	negative	negative
Spiking	positive	negative	negative	negative	negative

Reference Values qualitative: Maize-DNA (Maize-specific)

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	9	9	6	7	1
Number negative	0	0	2	1	7
Percent positive	100	100	75	88	13
Percent negative	0	0	25	13	88
Consensus value	positive	positive	positive	positive	negative
Spiking	positive	positive	negative	negative	negative

For sample 3 and 4 consensus values with 75% and 88% positive results were obtained. Maize was not added to samples 3 and 4. However, traces can not be excluded.

Reference Values qualitative: GMO-Soya RR (GTS 40-3-2)

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	0	0	12	12	0
Number negative	12	12	0	0	12
Percent positive	0	0	100	100	0
Percent negative	100	100	0	0	100
Consensus value	negative	negative	positive	positive	negative
Spiking	negative	negative	positive	positive	negative

Reference Values qualitative: GMO-Soya RR2 (MON89788)

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	0	0	9	9	0
Number negative	9	9	0	0	9
Percent positive	0	0	100	100	0
Percent negative	100	100	0	0	100
Consensus value	negative	negative	positive	positive	negative
Spiking	negative	negative	positive	positive	negative

Reference Values qualitative: Lectin-DNA (Soya-specific)

	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
Number positive	2	8	8	8	0
Number negative	5	0	0	0	7
Percent positive	29	100	100	100	0
Percent negative	71	0	0	0	100
Consensus value	none	positive	positive	positive	negative
Spiking	negative	positive	positive	positive	negative

For sample 1 no consensus value with $\geq 75\%$ positive or negative results was obtained. Soya was not added to sample 1, however, traces can not be excluded.

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 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 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.



Date: 3 June 2025

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- signed A. Scharf