

Naturally Contaminated Certified Reference Material Certificate of Analysis



Description of the Certified Reference Material (CRM)

Name	Naturally contaminated aflatoxin in brown rice
Product Code	TCRM-M1120-100
Batch Code	121130(33.0B)
Expiration date	October 1, 2023
Quantity	100g
Storage	≤ 8° C
Physical description of RM	Finely ground brown rice naturally contaminated with aflatoxin
Packaging	Zippered sealed foil pack

Certified values and uncertainties

Compound	Mass Concentration	
	Certified Value	Uncertainty*
Aflatoxin B1	28.7 µg/kg	± 2.4 µg/kg
	Certified Value	Uncertainty*
Aflatoxin B2	4.3 µg/kg	± 0.4 µg/kg
	Certified Value	Uncertainty*
Aflatoxin G1	Assigned Value **	Uncertainty*
	ND	N/A
Aflatoxin G2	Assigned Value **	Uncertainty*
	ND	N/A

* Expanded uncertainty at a 95% confidence level (k = 2). All calculations of expanded uncertainty are based on the criteria outlined in the JCGM 100:2008; Guide to the Expression of Uncertainty in Measurement.

** This is not a certified value with metrological traceability. This value is derived from multiple analyses over multiple days.

Metrological traceability

The corresponding parameters for this naturally contaminated material are assigned value based on results from multiple methods. All equipment calibrations are performed using Certified Reference Materials. Measurements utilized for value assignment of the certified value are traceable to SI units through an unbroken chain providing metrological traceability.

Julie Brunkhorst – VP of the Technical Division

August 2, 2019



This CoA verifies the reference material passes the required specifications and is released for sale. This Certified Reference Material is produced and certified under the Trilogy Analytical Laboratory ISO 17034:2016 scope of accreditation. This certificate has been electronically signed.

Method of analyte verification

<p>LCMSMS Column: Kinetex 2.6µm C18 100Ax3.0mm Ionization: ESI positive mode System: API5500/6500/6500+ Aflatoxin B1 Precursor 313.1, Fragments 285.0/241.1 Aflatoxin B2 Precursor 315.1, Fragments 287.0/259.0 Aflatoxin G1 Precursor 329.1, Fragments 311.1/115.2 Aflatoxin G2 Precursor 331.0, Fragments 313.1/245.1</p>	
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Method reference for characterization

AOAC 994.08 Modified, Technology: LC-MS/MS

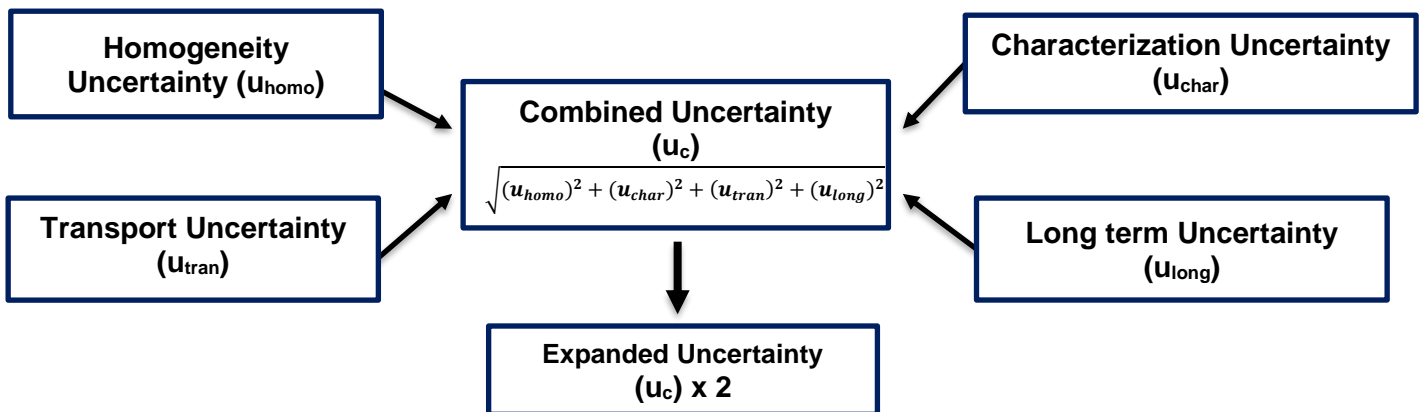
LC-MS/MS using stable isotope labeled internal standards, Technology: LC-MS/MS

AOAC 2005.08 with modification AOCS Aa 11-05, Technology: HPLC/PHRED

AOAC 994.08 with Modifications, Technology: HPLC

Measurement of uncertainty

All calculations of expanded uncertainty ($k = 2$) are based on the criteria outlined in the ISO Guide to the Expression of Uncertainty in Measurement (GUM). Expanded combined uncertainty, which is calculated and presented for all Naturally Contaminated Certified Reference Materials, represents an estimated range of confidence equal to the root sum squared of all total inherent variance of pertinent components expanded with a coverage factor providing 95% confidence ($k = 2$).



*Uncertainty from transport stability and long-term stability have been evaluated and are considered negligible.

General information

This material represents a food/feed agricultural product commonly contaminated with mycotoxins. It has been ground to a fine consistency (30 mesh; 0.595 mm) and thoroughly homogenized to ensure uniform distribution of the analyte(s). Samples are analyzed numerous times by multiple methods over the course of several analytical runs utilizing the reference methods listed above. The assigned value(s) come from the robust statistical means of the technically evaluated results. This data is corrected for recovery loss which represents the best estimate of the true value.

Intended use of the Naturally Contaminated Certified Reference Materials (CRM)

Naturally contaminated Certified Reference Materials can be used for laboratory quality control, training tools, method comparisons, method validations, intra laboratory comparisons, inter laboratory comparisons, method bias indicators, verification of laboratory performance and method troubleshooting by HPLC, GC, MS, MSMS, or TLC.

Instructions for use

Allow material to come to room temperature before use to prevent moisture condensation in packet. Samples should be sealed promptly and returned to recommended storage conditions after use.

Homogeneity and stability

Homogeneity and stability are verified through extensive studies performed at Trilogy Analytical Laboratory. Homogeneity was verified using a sample size of 5g. A recommended minimum sample for use is $\geq 5g$ for extraction to ensure a representative sample. All variability of assigned values attributed from heterogeneity is included in the measurement of uncertainty. Naturally contaminated Certified Reference Material stabilities, stored under proper conditions, are verified through short term (transportation) stability studies, long term stability studies and stability monitoring.

Safety precautions

Good laboratory practices should be observed while handling all Trilogy Reference Materials. Follow the recommended precautionary measures (OSHA 29 CFR 1910.1450) for handling chemicals and powders. Avoid contact with eyes, skin, and clothing. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. This product is for laboratory use only and is not intended for animal or human consumption. For specific product Safety Data Sheets contact Trilogy Analytical Laboratory.

Further information

Trilogy naturally contaminated Certified Reference Materials are for laboratory use only. Trilogy does not make any warranties, expressed or implied, in connection to reference materials, other than that the product meets the quality control specifications at Trilogy Analytical Laboratory. Trilogy naturally contaminated Certified Reference Materials are to be used at the purchaser's discretion. In no way does Trilogy accept responsibility for the use or work performed by the purchaser.