American Oil and Chemists' Society
Certified Reference Materials
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CERTIFICATE OF ANALYSIS

AOCS 0407-A | Non-Modified | Maize | Powder

Certified Presence	Certified Value (g/kg)	Measurement Uncertainty	Test Method
Absent of GA21, MIR162, MIR604 and MZHG0JG maize	0 g/kg	1 g/kg	Real-time PCR

Description: This is the first batch of non-modified maize CRM prepared by AOCS for Syngenta Seeds, LLC. A total of 3000 seeds (10 aliquots of 300 seeds) were evaluated and all of the aliquots tested negative for GA21, MIR162, MIR604 and MZHG0JG maize. The measurement uncertainty is the expanded uncertainty using the value of the upper bound of impurity. The standard uncertainty can be obtained by dividing the expanded uncertainty by $2\sqrt{3}$ (rectangular distribution). This material is for limited purposes only: see "Intended Use" and "Terms and Conditions."

This certificate is valid through: July 2027

This validity date may be extended when further evidence of stability becomes available. Customers will be notified by AOCS if a stability issue arises at AOCS Headquarters.

Introduced: 17-AUG-07

Revised: 17-AUG-08, 04-MAY-09, 04-MAY-11, 03-JAN-12, 17-FEB-13, 29-MAY-13, 24-JUL-13, 30-MAY-14, 31-AUG-2015, 10-AUG-2016, 15-JUN-17, 19-JUL-18, 26-APR-19, 31-OCT-19, 10-AUG-20, 29-JUN-21, 06-JUL-22, 07-JUL-23, 02-JUL-24, 07-NOV-24, 18-JUL-25, 08-JUN-26

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AOCS Mission: AOCS advances the science and technology of oils, fats, proteins, surfactants and related materials, enriching the lives of people everywhere.

Characterization

Product Description CRM AOCS 0407-A has been prepared by AOCS from maize seed. CRM AOCS 0407-A is available in 27-mL glass headspace vials containing approximately 10 g of material. Users are informed that this reference material has been produced from seed of non-modified maize delivered by Syngenta Seeds, LLC.

Homogeneity and Trait Verification The homogeneity of CRM AOCS 0407-A is related to the purity of the seeds. 3000 out of 3000 seeds tested negative for the GA21, MIR162, MIR604 and MZHG0JG maize events by real-time PCR by Syngenta Seeds, LLC. Based on the sample impurity of 0% as determined using SeedCalc8, the batch was expected to be homogenous.

To further confirm homogeneity, ten vials of CRM AOCS 0407-A were evaluated to determine the within-unit and between-unit property value. The property value is defined as the ratio between copies of the event-specific target (GA21 and MIR162) and copies of a taxon-specific reference target (*adh1*). Variability of this ratio within CRM vials and between CRM vials is reported as the within-unit relative standard deviation (RSD_w), and the between-unit relative standard deviation (RSD_b), respectively. The results confirm that AOCS 0407-A is homogenous, because all results are below LOQ (limit of quantification) for both GA21 and MIR162 maize events. The absence of event GA21 and MIR162 in this CRM was verified in all ten vials.

CRM	RSD_w [%]	RSD_b [%]
AOCS 0407-A	Below LOQ	Below LOQ

Stability AOCS Certified Reference Materials are assessed for transport (short-term) and long-term stability and tested for stability on an annual basis and certificates may be extended based on the outcome of this testing. Customers may request extended certificates, but they are informed that results are based on samples that are obtained from AOCS' inventory. AOCS cannot guarantee the integrity of samples outside of our control.

Analytical Method Used for Certification

The Certified value is based on the purity of the non-modified maize material used in the production of this CRM. Eurofins-GeneScan, New Orleans, LA (an ISO 17025-accredited laboratory) performed GA21, MIR162, MIR604 and MZHG0JG event-specific qualitative real-time PCR to verify the absence of the Events GA21, MIR162, MIR604 and MZHG0JG maize, and GA21 and MIR162 event-specific quantitative real-time PCR to determine the copy number ratio between the GA21 and MIR162 event-specific target and the taxon-specific reference target for the assessment of homogeneity. Purity and stability results were used to determine the expanded uncertainty of the certified value.

Warnings and Precautions

This product is for laboratory use only and is not for consumption. The user of this CRM should follow safety requirements and rules issued by voluntary organizations and government agencies expert in the field of laboratory safety.

Intended Use

This CRM, AOCS 0407-A, is intended for use as quality control material or calibrant in methods for the detection, identification, and/or quantification of biotechnology-derived events.

Instructions for Use

Upon receipt the product should be stored in a sealed container in the dark and at ambient or cooler conditions. The product may have settled during shipment, therefore, thoroughly mix the CRM before use to ensure homogeneity.

If the user of this CRM intends to use it multiple times, proper protocols must be followed to ensure that the sample retains its integrity. Use a clean laboratory spatula to remove the intended sample amount. After the sample has been removed, flush the headspace of the vial with nitrogen gas, then replace the rubber stopper. Place a new 20mm tear-off aluminum unlined seal on top of the rubber stopper and crimp it to the vial by using a crimping tool. Store the CRM in the dark and at ambient or cooler conditions and repeat this process for all subsequent uses.

Sample size:

The recommended **sample intake** suitable for DNA extraction and real time PCR is 1 g.

Protocols have been followed to ensure that this CRM is absent of the traits it has been tested against. Please follow all instructions on this certificate to prevent contamination of the CRM.

Note: The AOCS 0407-A certification report is available online and a paper copy could be supplied upon request.

Terms and Conditions (i–ix)

i. The CRM AOCS 0407-A shall be used solely 1) in assays for (a) detecting the absence of GA21, MIR604, MIR162, MZHG0JG, or (b) quantification of GA21, MIR604, MIR162, MZHG0JG; or 2) for determining whether an assay cross-reacts with CRM AOCS 0407-A. CRM AOCS 0407-A shall be used for no other purpose. Specifically the CRM may not be used to develop a detection method for non-modified nor trait(s) present therein. No other rights are conveyed by the sale of the CRM 0407-A to any purchaser, including any rights to any pending or granted Syngenta Seeds, LLC patents or other Syngenta Seeds, LLC intellectual property that may protect the CRM or non-modified or trait(s) present therein or a detection method for non-modified powder.

ii. Neither the CRM AOCS 0407-A nor any extract or portion thereof shall be resold or redistributed by any purchaser, unless the resale or redistribution is required by national law in force in the purchaser's country.

iii. Neither the CRM AOCS 0407-A, nor any extract or portion thereof, shall be used for human or animal consumption or human or animal trials.

iv. Neither the CRM AOCS 0407-A nor non-modified DNA, nor any part of either of these, shall be used for transformation or breeding.

v. No characterization or derivation of GA21, MIR604, MIR162, MZHG0JG, of the trait or traits present in CRM AOCS 0407-A, or of the CRM AOCS 0407-A shall be performed, except as allowed for in section (i).

vi. All assay activities undertaken using the CRM AOCS 0407-A shall be conducted in strict compliance with all applicable laws governing such activities and shall comply with conditions of all permits and authorizations which may be required for such activities; and such activities shall be strictly limited to assays in contained facilities, for example, laboratories.

vii. Prior to disposal of any used or excess CRM AOCS 0407-A or residues thereof, such material or residue must be treated in a manner that degrades the CRM material, such as by autoclaving.

viii. CRM AOCS 0407-A shall not be exported nor re-exported in violation of any applicable laws or without securing any necessary export or import clearances or permits.

ix. THE CRM 0407-A IS PROVIDED FOR THE PURPOSE OF IDENTIFYING, DETECTING AND QUANTIFYING GA21, MIR604, MIR162, MZHG0JG AND FOR NO OTHER PURPOSE. AOCS HAS TESTED CRM 0407-A WITHIN THE PAST 24 MONTHS AND STATES THAT IT HAS DETERMINED IT TO BE OF SUFFICIENT QUALITY AND FIT FOR THE PURPOSES STATED HEREIN. NO SYNGENTA SEEDS, LLC WARRANTY IS PROVIDED WHETHER EXPRESS OR IMPLIED, IN RELATION TO THE CRM AOCS 0407-A AND SYNGENTA SEEDS, LLC MATERIALS. SYNGENTA SEEDS, LLC MAKES NO REPRESENTATION OR WARRANTY THAT THE USE OF THE CRM AOCS 0407-A, WHETHER BEFORE, OR AFTER THE EFFECTIVE DATE OF THE APPLICABLE CERTIFICATE, WILL NOT INFRINGE ANY PATENT OR OTHER PROPERTY RIGHTS.