

Certificate of the Reference Material

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Name of the Material : Aflatoxins in Dried Fig
Material Code : UME CRM 1302
Issue Date : 31.08.2016
Revision Date : 18.06.2026 (Revision history can be found on the last page)
Validity Period of the Certificate : 6 months from the sales date
Certified Values :

Parameter	Certified Value ^[2] (µg/kg)	Uncertainty ^[3] (µg/kg)
AFB ₁ ^[1]	5.5	0.8
AFB ₂ ^[1]	0.61	0.12
AFG ₁ ^[1]	2.19	0.52
AFG ₂ ^[1]	0.19	0.04
Total AF ^[1]	8.5	1.1

[1] Certified values are calculated from the unweighted mean of results by two reference methods HPLC-FLD and ID-LCMS developed at TÜBİTAK UME.

[2] The certified values and the uncertainties are traceable to the International System of Units (SI) through a calibration hierarchy using high purity materials of each parameter that were value-assigned using TÜBİTAK UME qNMR purity assessment procedure.

[3] The expanded uncertainty of certified value includes characterization, homogeneity, stability components, and is stated as the standard uncertainty of measurement multiplied by the coverage factor $k = 2$, which for a normal distribution corresponds to a coverage probability of approximately 95%. The standard uncertainty of measurement has been determined in accordance with the "Guide to the Expression of Uncertainty in Measurement" (GUM).

TÜBİTAK UME has been accredited by TÜRKAK as a reference material producer under the accreditation number AB-0001-RM in accordance with the TS EN ISO 17034:2018 standard.

Turkish Accreditation Agency (TÜRKAK) is a signatory to the European Cooperation for Accreditation (EA) Multilateral Agreement (MLA) and the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement (MRA) for the recognition of reference material certificates.

Sales Date


Assoc. Prof. Mustafa ÇETİNTAŞ
Director

The following pages are an integral part of the certificate. The use of current certificate is customers' responsibility.

Most recent certificate can be downloaded from www.ume.tubitak.gov.tr.

Informative Values

Parameter	Value
Moisture content	6.7 % [1]

[1] Value is calculated from the unweighted mean of vacuum oven drying and coulometric Karl-Fischer measurements of 10 different units.

Description

A unit contains approximately 160 g of dried fig powder in 250 mL HDPE bottle vacuum packed with aluminium sachet. Detailed information about the material and the certification process is presented in the certification report.

Intended Use

This material is intended to be used in method validation and quality control for the determination of AFB₁, AFB₂, AFG₁, AFG₂ and total aflatoxin measurements in dried fig.

Instructions for Use

All precautions must be taken in order to prevent contamination, moisture uptake and exposure to light during the use of material. Minimum sample intake is 6 g. The material can be safely dispatched where the temperature does not exceed 4 °C and the transportation period of 2 weeks.

Storage Conditions

UME CRM 1302 should be stored at 4 °C or lower temperatures. It is recommended to use the CRM as soon as possible after opening the bottle. If the CRM would be used again, it is recommended to store opened bottle at temperatures below -20 °C. Division of the material into subsamples to minimize freeze-thaw cycles is recommended, however, sample should not be subjected to moisture in air and light for a long time.

TÜBİTAK UME cannot be held responsible for changes that might occur to the material at customer's premises due to noncompliance to the instructions for use, and the storage conditions given in the certificate.

Safety Information

Usual laboratory safety precautions apply. Use and dispose of material according to existing local rules is strongly recommended. The use of dust mask and working in a laboratory with a good ventilation is highly recommended.

Participants

Information about the laboratory participated in the characterization study is given in the table below.

Laboratory	Address
TÜBİTAK UME	TÜBİTAK Gebze Yerleşkesi, Barış Mahallesi, Dr. Zeki Acar Caddesi No.1, 41470 Gebze - Kocaeli / Türkiye

Methods and/or Techniques Used for the Determination of the Certified Values

The information about the methods used in the characterization study is given below. Even though both methods use the same extraction and cleanup technique, certified values are independent of the methods.

Method/Technique	Parameter
Immunoaffinity column clean up and reversed phase High Performance Liquid Chromatography with post column bromination and fluorescence detection (HPLC-FLD)	AFB ₁ , AFB ₂ , AFG ₁ , AFG ₂ and Total AF
Immunoaffinity column cleanup and Isotope Dilution Liquid Chromatography Mass Spectrometry (ID-LCMS)	AFB ₁ , AFB ₂ , AFG ₁ , AFG ₂ and Total AF

Revision History

Date	Remarks
31.08.2016	First publication.
08.11.2018	Certificate is updated due to format change of the document.
25.11.2019	Uncertainty values are updated for 6 months shelf life and new value assignment approach. Information about shipping conditions is added. Certificate is updated due to changes in the format of certificate for reference materials.
18.06.2026	Certificate is updated due to corporate identity (logo) change of TÜBİTAK UME.