CERTIFICATE OF ANALYSIS

U-[13C20]-T2 Triol in Acetonitrile LCMS grade

This document is designed, and the certified values and uncertainty are determined in accordance with ISO Guide 31, ISO Guide 34, ISO Guide 35, AOAC, and Eurachem/ CITAC Guides.

Description of the Reference Material (RM)

	Product name:	U-[13C20]-T2 Triol				
	Product number:	FIA000182				
	CAS number:	U-[13C20]-T2 Triol	341114-98-2 (unlabelled)			
	Lot number:	TRI13C18061403				
	Expiry date:	14-Jun-2027				
	Certified value (s):	U-[13C20]-T2 Triol	**10,05**	**±**	**0,21**	**µg/mL**
	Isotope incorporation by mass spectrometry 13C/Molecule	U-[13C20]-T2 Triol	**97,1%**			
	Physical description:	Clear solution of toxin in Acetonitrile LCMS grade				
	Packing	Amber glass vial filled with 5 mL of solution				
	Storage conditions	≤ -10°C				
	Matrix and starting material:	This material was prepared with/from:				
		Acetonitrile LCMS Grade		Batch:	0001204102BS	
		U-[13C20]-T2 Triol		Internal ID:	SS-TRI13C-162302	

Intended use of the RM:

For laboratory use for R&D purposes only. The main purpose of this material is for analytical instrument calibration (e. g. external calibration, standard addition). Not for drug, household or other uses.

Instruction for the correct use of the RM:

The vial should be stored in a dark place at ≤ -10°C . Before usage of the RM, allow the vial to warm to room temperature. The expiry date of this RM is based on the current knowledge and holds only for proper storage conditions in the originally closed vials / packages. Solutions prepared for calibration purpose should be protected from exposure to light. Discard solutions after use in accordance with appropriate safety regulations for chemical substances.

Hazardous situation:

H225 : Flammable liquid - Category 2 - Highly flammable liquid and vapour
H302 : Acute toxicity - Oral - Category 4 - Harmful if swallowed
H312 : Acute toxicity - Dermal - Category 4 - Harmful in contact with skin
H319 : Eye irritation - Category 2 - Causes serious eye irritation
H332 : Acute toxicity - Inhalation - Category 4 - Harmful if inhaled
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid exposure. Wear suitable protective clothing.

Safety measures:

Special care must be taken when manipulating this standard. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Use only in a chemical fume hood. Safety shower and eye bath must be near. In case of spills, cover and absorb with an inert dry material such as dry-lime, sand or soda ash and place in an appropriate waste disposal container.
Keep container tightly closed. Do not store in direct sunlight. Keep away from heat, sparks, flame and incompatible material. Storage area should be cool, dry and away from incompatible materials.

Further information:

Further information is available in the SDS available online (downloading page: www.fianovis.com/documentation (documentation section)). End users should conduct their own investigations to determine the suitability of the information for their particular research purposes. Under no circumstances will the supplier of this RM be held responsible for any damage resulting from handling or contact with the product.

Traceability

The values are based on the chromatographic determination of the concentration of the stock solution. The chromatographic assay method was demonstrated to be selective through validation of the analytical method. Pipette calibration is verified by an accredited external calibration service. Production is carried out with specially dedicated glassware. Only Class A glassware is used for volumetric measurements.

Calculation of certified values and associated uncertainties

This calibrant is certified on solution preparation. Mass concentration calculation is based on certified concentration and dilution step. Toxin is pipetted and diluted in Acetonitrile LCMS grade.

$$C\ (\mu g/mL) = \frac{C_{ss} \times V_p}{V_D}$$

Toxin	Source				Standard uncertainty
U-[13C20]-T2 Triol	Liquid solution C_{ss}	concentration	223,92	µg/mL	0,47
	Volumetry procedure V_p	volume	0,68	mL	0,00
	Dilution V_D	volume	15,15	mL	0,02
$Combined_u = \sqrt{\left(\frac{u_P}{P}\right)^2 + \left(\frac{u_{Cm}}{V_{Cm}}\right)^2 + \left(\frac{u_{Vp}}{V_p}\right)^2 + \left(\frac{u_{V1}}{V_1}\right)^2}$					0,01
$Concentration_{Toxin} = \frac{Concentration\ mother}{V_{D1}}$				µg/mL	**10,05**
Total expanded uncertainty (using a coverage factor k=2)					**0,21**

Notes: The purity of the mycotoxin used for this RM was determined by liquid chromatography.
Following the Guide to the Expression of Uncertainty in measurement (GUM) the expanded uncertainty of toxin level is obtained by multiplication with a coverage factor K for which 2 is usually chosen to obtain a confidence level of 95 %.

Carbon 13 calculation

Isotopic incorporation	
Compound	**Isotopic distribution**
$^{13}C_{17}$ T2 Triol	2,2%
$^{13}C_{18}$ T2 Triol	10,4%
$^{13}C_{19}$ T2 Triol	31,5%
$^{13}C_{20}$ T2 Triol	56,0%
Calculated isotopic incorporation (^{13} C/molecule)	97,1%

The calculation are based on LC-MS/MS data

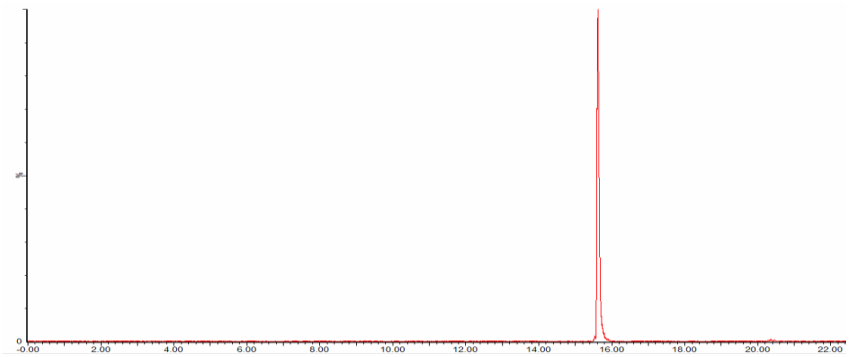
Quality control

Confirmation of the certified concentration by HPLC-PDA

The certified concentrations of the prepared solution was confirmed by HPLC-PDA against a reference batch.

Chromatogram
Chromatographic conditions:

Column :	Luna C18 150 x 4,6 mm 5 µm			
Mobile phase :	H2O + 0.1% acide acetique / ACN / Gradient			
Flow (mL/min) :	1,00			
Temperature (°C) :	30,00			
Detector :	PDA			
U-[13C20]-T2 Triol	10,42	±	0,20	µg/mL
Mean of 6 replicates measurement against reference batch, confidence interval with P = 95%				



Chromatogram of Toxin

References:

a-ISO GUIDE 31:2015, Reference Materials - Contents of certificates, labels and accompanying documentation.
b-ISO GUIDE 34:2009, General requirements for the competence of reference material producers
c-ISO GUIDE 35:2006, Reference materials - General and Statistical Principles.
d-ISO/IEC Guide 98-3:2008 Uncertainty of measurement-Part 3 : Guide to the expression of uncertainty in measurment (GUM:1995)
e-Eurachem/CITAC guide (2019), Traceability in Chemical Measurement.
f-Eurachem/CITAC guide (2012), Quantifying Uncertainty in Analytical Measurement.
g-AOAC Official Method 970.44-1971 - Preparation of Standards for Mycotoxins.

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Prepared by: CHETRY Marion
Quality Control

Date: 09-Nov-2026