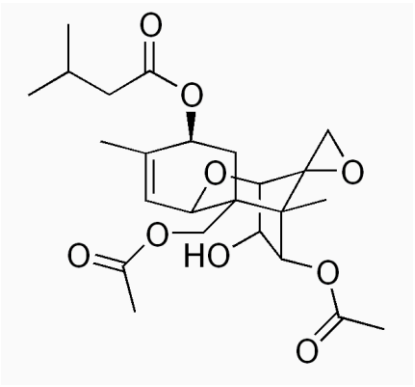
aokin T2-Toxin

Standard solution
known concentration of Mycotoxin

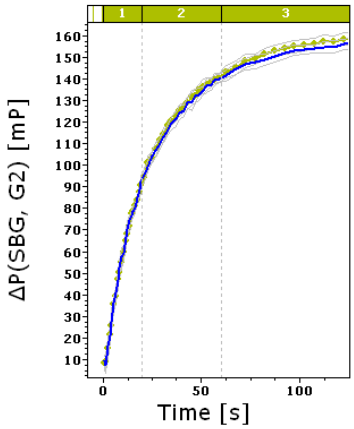
Order-No: CH-07-L1-50



Analyte: T2-Toxin (T2)

Specification:

Substance:	T2-Toxin
Empirical Formula:	$C_{24}H_{34}O_9$
Concentration:	50 µg/mL
Diluted in:	Acetonitrile
Molecular Weight:	466,52
CAS-No.:	T2-Toxin: 21259-20-1, Acetonitrile: 75-05-8
Volume:	1 mL
Expiry date:	1 year after delivery
Storage conditions:	dark, at 2-8°C
Certification:	The calibrant is certified on the basis of gravimetric preparation. Values are based on weight amount, purity and dilution steps, and confirmed by Kinetic Fluorescence Polarization and UV spectroscopy. Uncertainty ± 6 µg/mL in accordance with ISO Guide 31, ISO Guide 35 and Eurachem/CITAG Guides.



blue: ***aokin*** T2-Toxin-Standard
green: external reference standard

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aokin *ist ISO 9001 zertifiziert und arbeitet nach GLP und ISO 17025.*

Calculation of uncertainty:

(After the concentration of the gravimetric prepared solution was confirmed by kinetic fluorescent polarization, the uncertainty of the calibrant solution was calculated on the basis of preparation)

Uncertainty components	Description	Standard uncertainty (u)	
Purity (P) of solid T2-Toxin	P = 99 %	u(P) = 0,3%	a
Weighing procedure weighted sample: m_{ws} = 0.51 mg	repeatability: 0.03 mg linearity: 0.012 mg	u(m) = 0.032 mg	b
Dilution procedure V_f = 10 mL	calibration: 10 mL ± 0.25 mL repeatability: 0.1 mL volume expansion solvent	u(cal) = 0.1 mL u(rep) = 0.1 mL u(Vol.exp.) = 0.119 mL u(V) = 0.12 mL	c d e f

[a] Maximum tolerance of purity (rectangular distribution) was divided by $\sqrt{3}$
[b] Estimation of this u-value is based upon the values for repeatability and linearity described in the user manual of the microbalance
[c] A triangular distribution (division by $\sqrt{6}$) was chosen for the calculation of u(cal)
[d] Based on a series of ten fill and weigh experiments on a typical 500 mL flask; the value was used directly as a standard deviation
[e] Based on the density of 0.7857 g/cm^3 at temperature T = 20°C and a maximum temperature variation of ± 3°C, of volume expansion, relative volume expansion coefficient of acetonitrile is 1370 * 10^{-6}/°C, volume expansion term (rectangular distribution) was divided by $\sqrt{3}$
[f] The three contributions are combined to give the $u\,(V) = \sqrt{u(cal)^2 + u(rep)^2 + u(Vol.exp.)^2}$

Calculation of the combined uncertainty u_c and the expanded standard uncertainty U:

$$c_{toxin} = \frac{m_{WS} \times P}{V_f} = \frac{0.51 \times 0.99}{10} = 0{,}05\ mg/ml$$

$$\frac{u_c\,(c_{toxin})}{c_{toxin}} = \sqrt{\left[\frac{u\,(P)}{P}\right]^2 + \left[\frac{u\,(m)}{m_{ws}}\right]^2 + \left[\frac{u\,(V)}{V_f}\right]^2} = \sqrt{\left[\frac{0.3}{99}\right]^2 + \left[\frac{0.032}{0.51}\right]^2 + \left[\frac{0.12}{10}\right]^2} = 0.063$$

$$u_c\,(c_{toxin}) = c_{toxin} \times 0.063 = 50\ \mu g/ml \times 0.063 = 3{,}1\ \mu g/ml$$

Calculation of expanded standard uncertainty U using a coverage factor k = 2

$$U(c_{toxin}) = u_c\,(c_{toxin}) \times 2 = 3{,}1\ \mu g/ml \times 2 = 6{,}2\ \mu g/mL$$

Discussion of traceability:

This calibrant is certified on the basis of gravimetric preparation. Thus the certified value (mass concentration of T2-Toxin) is based on the weighed amount of the starting material and are therefore traceable to the stated purity of the solid mycotoxin. High purity material represents a practical realization of concentration units, through conversion of mass to molar quantity.

Danger

H225-H302-H312-H319-H332

P210-P280-P305 + P351 + P338

Danger

Contains: T2-Toxin, Acetonitrile

Volume: 1 mL

Highly flammable liquid and vapour. Harmful if swallowed. Harmful in contact with skin. Causes serious eye irritation. Harmful if inhaled.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Wear protective gloves/protective clothing/eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Normal laboratory safety should be observed.

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