



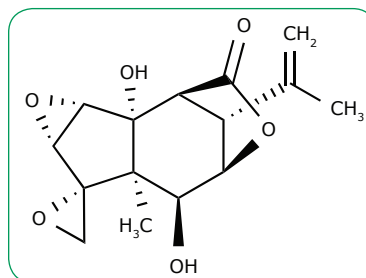
## New *TraceCERT*® CRM Solution for Tutin



Tutin is a toxic oxygenated sesquiterpene occurring in the tutu plant (genus *coriaria*) that is found in New Zealand. It is responsible for poisoning through contaminated honey, when honeybees collect honeydew produced by sap-sucking vine hopper insects that feed on the tutu plant. Therefore, the Australia New Zealand Food Standards Code has set a maximum level of tutin of 0.7 milligrams per kilogram for honey and honey combs [1].

We present a new *TraceCERT*® certified reference material of Tutin as a 20ppm solution in acetonitrile, suitable as a calibrant for chromatographical methods such as LC/MS. This product is produced in accordance with ISO/IEC 17025 and ISO Guide 34 accreditation and is traceable to NIST SRM through quantitative NMR measurement of a concentrated stock solution in deuterated acetonitrile. The final CRM was produced by gravimetric dilution of the stock solution to the final concentration. Accelerated and real time stability tests

as well as homogeneity tests have been performed by LC/MS and have been taken into account for the expanded measurement uncertainty of the CRM (see Figure 1 on page 2).



Cat. No.	Description	Certified Concentration*	Solvent	Package Size
80718	Tutin solution	20.00 µg/g	Acetonitrile	0.5 mL

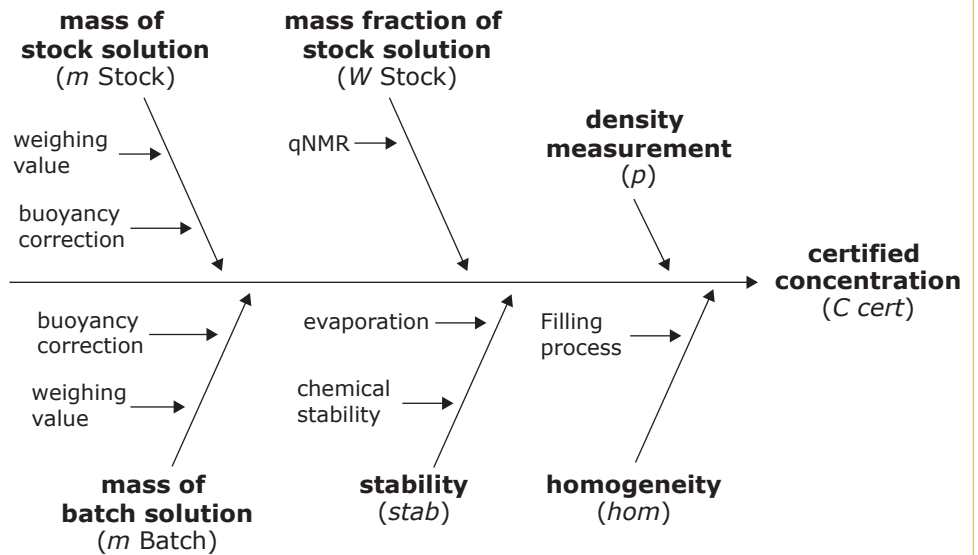
\*nominal value: exact lot specific concentration see certificate

**The relative contributions are:**

$u(m_{Stock})$	<0.02%
$u(m_{Batch})$	<0.02%
$u(W_{Stock})$	<0.4%
$u(hom)$	<0.8%
$u(stab)$	<1.8%
$u(p)$	<0.07%

Combined uncertainty:  
 $u(C_{cert})$  2.0%

Expanded uncertainty:  
 $U(C_{cert})$  4.0%



**Figure 1:** Factors considered for the uncertainty evaluation

**References:**

1. <http://www.foodsafety.govt.nz/industry/sectors/honey-bee/tutin/>

**JUST ONE CLICK AWAY**

[SigmaAldrich.com/tutin](http://SigmaAldrich.com/tutin)



We offer you several Phytotoxins,  
please find out:  
[SigmaAldrich.com/phytotoxins](http://SigmaAldrich.com/phytotoxins)



**To place an order or receive technical assistance**

In the U.S. and Canada, call toll-free 1-800-645-5476

For other countries across Europe and the world, please visit: [emdmillipore.com/offices](http://emdmillipore.com/offices)

For Technical Service, please visit: [emdmillipore.com/techservice](http://emdmillipore.com/techservice)

To place an order: [SigmaAldrich.com/customersupport](http://SigmaAldrich.com/customersupport)

To receive technical assistance: [SigmaAldrich.com/techservice](http://SigmaAldrich.com/techservice)

[MilliporeSigma.com](http://MilliporeSigma.com)

MilliporeSigma  
290 Concord Road  
Billerica, MA 01821

