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ProductInformation

Fumonisin B_1
from *Fusarium moniliforme*

Product Number **F 1147**
Storage Temperature 2-8 °C

Product Description

Molecular Formula: $C_{34}H_{59}NO_{15}$
Molecular Weight: 721.8
CAS Number: 116355-83-0

This material is a mycotoxin extracted from a static fermentation of *Fusarium moniliforme* and it is not chemically treated or modified during processing. Fumonisin has virtuallly no UV-Vis absorbance, which would allow for quantitation of the material in solution. For quantitation of fumonisin, HPLC must be performed using pre-column derivatization with o-phthaldialdehyde and fluorescence detection.[1] Fumonisin can also be tested by TLC.

Fumonisin has been shown to inhibit protein serine/threonine phosphatases (PP1, PP2A, PP2B, PP2C, and PP5/T/K/H).[2] Inhibition of dephosphorylation was noted for all five protein serine/threonine phosphatases with IC_{50} values of 80-3000 µM. PP5 was the most sensitive to the inhibition with an IC_{50} of 80 µM. This concentration is similar to the estimated level reached in the rat body by feeding fumonisin B_1 to produce hepatic tumors. Inhibition of PP5 may play an important role in the toxicity and carcinogenicity of fumonisin B_1.

Fumonisin has also been shown to be involved in the activation of mitogen-activated protein kinase (MAPK).[3] Concentrations of 100 µM fumonisin B_1 work synergistically with insulin in the induction of mitogenesis in Swiss 3T3 cells. Specifically, fumonisin B_1 was shown to stimulate rapid, transient activation of mitogen-activated protein kinase (MAPK).

Precautions and Disclaimer

For Laboratory Use Only. Not for drug, household or other uses.

Preparation Instructions

This product is soluble at 10 mg/ml in methanol. It is also reported that this product should be soluble at 10 mM in DMSO and in acetonitrile (no concentration given).

Storage/Stability

It has been reported that this product is stable in acetonitrile, even in frozen aliquots, but slowly decomposes if stored in methanol or DMSO.

References

1. J. of Liquid Chrom., **13(10)**, 2077 (1990).
2. Fukuda, H., et al., Inhibition of Protein Serine/Threonine Phosphatases by Fumonisin B1, a Mycotoxin. Biochem. Biophys. Res. Commun., **220**, 160-165 (1996).
3. Wattenberg, E., et al., Activation of Mitogen-Activated Protein Kinase by the Carcinogenic Mycotoxin Fumonosin B1. Biochem. Biophy. Res. Commun., **227**, 622 (1996).

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