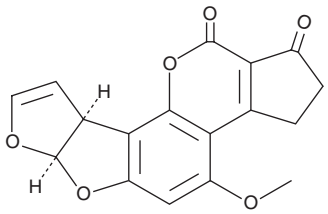
PRODUCT INFORMATION

Aflatoxin B_1

Item No. 11293

CAS Registry No.: 1162-65-8
Formal Name: 2,3,6aR,9aS-tetrahydro-4-methoxy-1H,11H-cyclopenta[c]furo[3',2':4,5]furo[2,3-h][1]benzopyran-1,11-dione
Synonyms: AFB_1, HSDB 3453, NSC 529592
MF: $C_{17}H_{12}O_6$
FW: 312.3
Purity: ≥98%
UV/Vis.: λ_{max}: 223, 265, 360 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Aflatoxin B_1 is supplied as a crystalline solid. A stock solution may be made by dissolving the aflatoxin B_1 in the solvent of choice. Aflatoxin B_1 is soluble in organic solvents such as DMSO and dimethyl formamide (DMF), which should be purged with an inert gas. The solubility of aflatoxin B_1 in DMSO is approximately 12 mg/ml and approximately 20 mg/ml in DMF.

Aflatoxin B_1 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, aflatoxin B_1 should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Aflatoxin B_1 has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Aflatoxin B_1 (AFB_1) is a genotoxic mycotoxin that has been found in Aspergillus.[1,2] It induces the formation of DNA adducts in rat liver microsomes.[1] AFB_1 induces transversion of guanine to thymine at codon 29 of the p53 tumor suppressor gene, a mutation commonly seen in hepatocellular carcinoma patients living in regions with high levels of aflatoxin contamination, in HepG2 cells.[2] *In vivo*, AFB_1 (50 and 100 µg/kg) induces hepatocellular carcinoma tumor formation in rats.[3]

References

1. Essigmann, J.M., Croy, R.G., Nadzan, A.M., *et al*. Structural identification of the major DNA adduct formed by aflatoxin B_1 *in vitro*. *Proc. Natl. Acad. Sci. USA* **74(5)**, 1870-1874 (1977).
2. Aguilar, F., Hussain, S.P., and Cerutti, P. Aflatoxin B_1 induces the transversion of G -> T in codon 249 of the p53 tumor suppressor gene in human hepatocytes. *Proc. Natl. Acad. Sci. USA* **90**, 8586-8590 (1993).
3. Wogan, G.N., Paglialunga, S., and Newberne, P.M. Carcinogenic effects of low dietary levels of aflatoxin B_1 in rats. *Fd. Cosmet. Toxicol.* **12(5-6)**, 681-685 (1974).

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