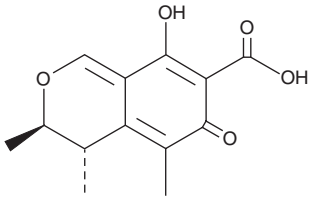
PRODUCT INFORMATION

Citrinin

Item No. 11320

CAS Registry No.: 518-75-2
Formal Name: (3R,4S)-4,6-dihydro-8-hydroxy-3,4,5-trimethyl-6-oxo-3H-2-benzopyran-7-carboxylic acid
Synonyms: NSC 186, (–)-Citrinin, CTN
MF: $C_{13}H_{14}O_5$
FW: 250.3
Purity: ≥98%
UV/Vis.: λ_{max}: 223, 251, 330 nm
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Fungus/*Penicillium citrinum*



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

Laboratory Procedures

Citrinin is supplied as a crystalline solid. A stock solution may be made by dissolving the citrinin in the solvent of choice, which should be purged with an inert gas. Citrinin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of citrinin in ethanol is approximately 2 mg/ml and approximately 20 mg/ml in DMSO and DMF.

Citrinin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, citrinin should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Citrinin 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

Citrinin is a mycotoxin that has been found in *Monascus* and has diverse biological activities.[1-4] It is active against *S. aureus*, methicillin-resistant *S. aureus* (MRSA), rifampicin-resistant *S. aureus*, and vancomycin-resistant *E. faecium* (MICs = 1.95, 3.9, 0.97, and 7.81 µg/ml, respectively), as well as the pathogenic yeast *C. neoformans* (MIC = 3.9 µg/ml).[2] It is cytotoxic to a variety of cells *in vitro*, including bovine kidney cells and mice embryonic stem cells.[4] Citrinin (30 µM) induces reactive oxygen species (ROS) production, mitochondrial membrane potential loss, and apoptosis in HepG2 cells, effects that can be blocked by the antioxidant resveratrol.[3] In contrast, citrinin reduces glutamate-induced excitotoxicity in primary rat cortical neurons at concentrations ranging from 0.1 to 1,000 nM and inhibits LPS-induced production of nitric oxide (NO) in RAW 264.7 cells at 0.625 to 40 µM.[4] It is toxic to brine shrimp larvae (LD_{50} = 96 µg/ml), as well as to rats and mice with oral LD_{50} values of 50 and 87-105 mg/kg, respectively.[2,4] It induces reproductive abnormalities in male mice and toxic effects in the liver, kidney, heart, and gastrointestinal tracts of various animals.[4] Citrinin has been found in stored cereal grains, as well as beans, fruit, and herbs.

References

1. Blanc, P.J., Laussac, J.P., Le Bars, P., *et al*. *Int. J. Food Microbiol.* **27(2-3)**, 201-213 (1995).
2. Subramani, R., Kumar, R., Prasad, P., *et al*. *Asian Pac. J. Allergy Immunol.* **3(4)**, 291-296 (2013).
3. Chen, C.-C. and Chan, W.-H. *Int. J. Mol. Sci.* **10(8)**, 3338-3357 (2009).
4. Filho, A.R.d.S., Islam, M.T., Ali, E.S., *et al*. *Food Chem. Toxicol.* **110**, 130-141 (2017).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM