

Product Data Sheet

Product Name: Citrinin-¹³C₁₃

Cat. No.: GC47096

Chemical Properties

Cas. No. N/A

SMILES O[13C]([13C]1=[13CH]O[13C@H]([13CH3])[13C@@H]([13CH3])[13C]1=[13C]2[13CH3])=[13C]([13C](O)=O)[13C]2=O

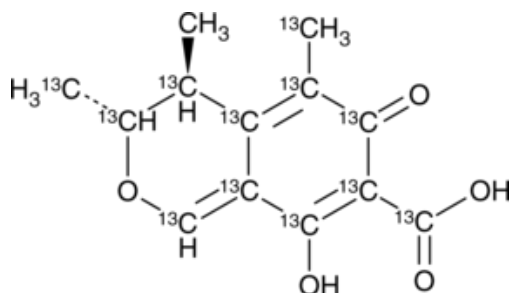
Formula [13C]13H14O5 M.Wt 263.2

Solubility Acetonitrile: soluble Storage Store at -20°C

General For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the tips ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Evaluation sample solution: ship with blue ice All other available size: ship with RT, or Condition blue ice upon request.

Structure



Background

Citrinin-¹³C₁₃ is intended for use as an internal standard for the quantification of citrinin by GC- or LC-MS. Citrinin is a mycotoxin that has been found in *Monascus* and has diverse biological activities.^{1,2,3,4} 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

Caution: Product has not been fully validated for medical applications. For research use only.

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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 μ M.⁴ It is toxic to brine shrimp larvae (LD_{50} = 96 μ g/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.

1.Blanc, P.J., Laussac, J.P., Le Bars, P., et al.Characterization of monascidin A from *Monascus* as citrininInt. J. Food Microbiol.27(2-3)201-213(1995) 2.Subramani, R., Kumar, R., Prasad, P., et al.Cytotoxic and antibacterial substances against multi-drug resistant pathogens from marine sponge symbiont: Citrinin, a secondary metabolite of *Penicillium* sp.Asian Pac. J. Allergy Immunol.3(4)291-296(2013) 3.Chen, C.-C., and Chan, W.-H.Inhibition of citrinin-induced apoptotic biochemical signaling in human hepatoma G2 cells by resveratrolInt. J. Mol. Sci.10(8)3338-3357(2009) 4.Filho, A.R.d.S., Islam, M.T., Ali, E.S., et al.A comprehensive review on biological properties of citrininFood Chem. Toxicol.110130-141(2017)

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