

Product Data Sheet

Product Name: Microcystin-RR

Cat. No.: GC11739

Chemical Properties

Cas. No. 111755-37-4

Chemical Name ((1E,3E,5S,6S)-6-methoxy-3,5-dimethyl-7-phenylhepta-1,3-dien-1-yl)-1,5,12,19-tetramethyl-2-methylene-3,6,9,13,16,20,25-heptaoxo-1,4,7,10,14,17,21-heptaazacyclopentacosane-11,22-dicarboxylic ac

SMILES CC(/C=C/[C@@H]([C@@H](C(N[C@H](CCC(N(C(C(N[C@@H]1C)=O)=C)C)=O)C(O)=O)=O)C)NC([C@@H](NC([C@H]([C@@H](NC([C@H](NC1=O)CCCNC(N)=N)=O)C(O)=O)C)=O)CCCNC(N)=N)=O)=C[C@H](C)[C@@H](OC)CC2=CC=CC=C2

Formula C₄₉H₇₅N₁₃O₁₂

M.Wt 1038.2

Solubility DMSO: soluble, Ethanol: Water: Soluble, Methanol: Soluble

Storage Store at -20°C

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

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

Structure

Background

Microcystin-RR is one of the microcystins with hepatotoxicity.

Microcystins are hepatotoxic cyclic heptapeptide toxins produced by cyanobacteria. It is reported that the toxicity of microcystins is initiated by the inhibition of protein phosphatases 1 and 2A.

In vitro: Microcystin-RR (MCRR), a metabolite of microcystin-LR, has been found to be less toxic than microcystin-LR (MCLR). The authors compared the dissociation constants

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of MCLR related to the interaction of three protein phosphatases, 1C, 1γ and 2A, with MCRR, and the results showed that the affinities of MCRR were almost the same as those of MCLR [1].

In vivo: Animal study found that MCRR at 200 μg/kg could not cause any symptoms in mice during 24h, and such dose was accepted as appropriate for the sublethal experiment. In addition, MCRR demonstrated variable results among the doses of 800, 1000 and 1200 μg/kg. 21 MCRR treated mice were thus classified into the four groups: (1) 8 died at 3–5 h, (2) 4 died at 7–8 h, (3) 2 were in a weakened state at 24 h, and (4) 7 were surviving at 24 h with loss of body weight. The analysis showed that the mice from the second group and the two weakened at 24 h had some neurological-like changes, e.g. that they leaned the bodies to the left, and at autopsy their bladders held volumes of urine [1].

Clinical trial: Up to now, Microcystin-RR is still in the preclinical development stage.

Reference:

[1] Ito E, Takai A, Kondo F, Masui H, Imanishi S, Harada K. Comparison of protein phosphatase inhibitory activity and apparent toxicity of microcystins and related compounds. *Toxicol.* 2002 Jul;40(7):1017-25.

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