



LKT Laboratories, Inc.

Microcystin-[D-Asp3]-LR

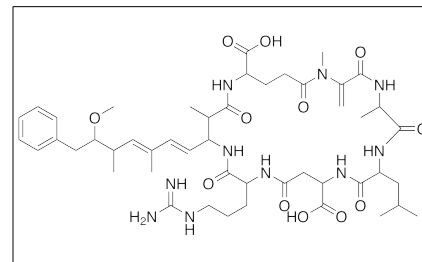
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Product Information

Product ID M3408
CAS No. 120011-66-7
Chemical Name [D-Asp3]-Microcystin-LR

Synonym desmethyl microcystin LR, Asp3-MCLR, [D-Asp3]-Microcystin- LR, desmethyl ("Asp3-MCLR")

Formula C₄₈H₇₂N₁₀O₁₂
Formula Wt. 981.2
Melting Point
Purity ≥95%
Solubility Soluble in methanol, DMSO.



Pricing and Availability

Bulk quantities available upon request

Product ID	Size	List Price
M3408	100 µg	\$262.50
M3408	1 mg	\$1732.50

Store Temp -20°C
Ship Temp Blue Ice

Description Microcystin-[D-Asp3]-LR is a cyclic heptapeptide initially produced by species of cyanobacteria *Microcystis*. Microcystin LR exhibits cytotoxic, pro-oxidative, and carcinogenic properties. Microcystin LR is particularly toxic to the liver, increasing cytochrome c release and expression of Bax and caspases 3, 8, and 9; microcystin LR also decreases expression of Bcl-2. In testicular cells, this toxin increases expression of c-KIT and induces apoptosis, causing a decrease in tubular diameter and testes weight. This compound also induces cytoskeletal reorganization, increasing phosphorylation of VASP and tau and also increasing dissociation of tau from the cytoskeleton. In vitro, microcystin LR inhibits protein phosphatases 1 (PP1) and 2A (PP2A) and induces oxidative damage by increasing levels of ROS and malondialdehyde and decreasing levels of glutathione and glutathione peroxidase. Microcystin LR also produces cognitive deficit in vivo, potentially through activation of glycogen synthase kinase-3B (GSK-3B). This compound also activates Nrf2 in cancer cells.

- References** Zhou Y, Chen Y, Yuan M, et al. In vivo study on the effects of microcystin-LR on the apoptosis, proliferation and differentiation of rat testicular spermatogenic cells of male rats injected i.p. with toxins. *J Toxicol Sci.* 2013;38(5):661-70. PMID: 24025782.
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- Zhang H, Cai C, Fang W, et al. Oxidative damage and apoptosis induced by microcystin-LR in the liver of *Rana nigromaculata* in vivo. *Aquat Toxicol.* 2013 Sep 15;140-141:11-8. PMID: 23747548.
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- Liang J, Li T, Zhang YL, et al. Effect of microcystin-LR on protein phosphatase 2A and its function in human amniotic epithelial cells. *J Zhejiang Univ Sci B.* 2011 Dec;12(12):951-60. PMID: 22135143.
- Gan N, Sun X, Song L. Activation of Nrf2 by microcystin-LR provides advantages for liver cancer cell growth. *Chem Res Toxicol.* 2010 Sep 20;23(9):1477-84. PMID: 20722399.

Caution: This product is intended for laboratory and research use only. It is not for human or drug use.