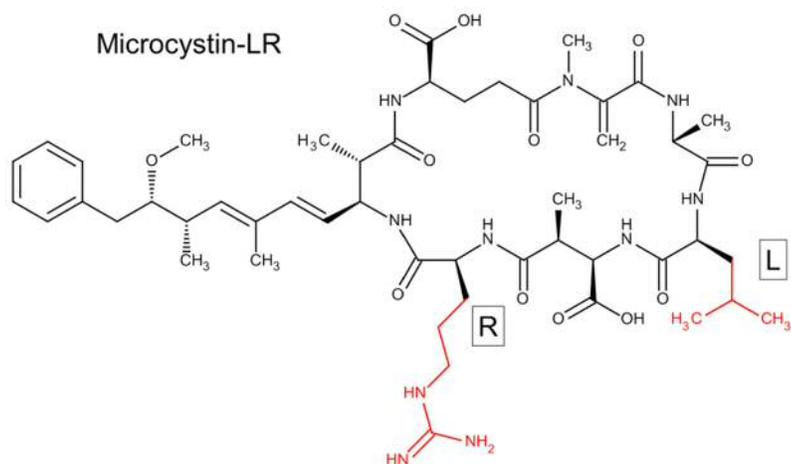


Microcystin-LR

Product Specification

Formula:	C ₄₉ H ₇₄ N ₁₀ O ₁₂
MW:	995.2
CAS:	101043-37-2
Purity:	≥95% (HPLC)
Identity:	Verified with LC/MS/MS
Appearance:	Clear film adhered to inside of the vial.
Hazard:	Highly irritant, may be carcinogenic, hepatotoxic.
Stability:	≥ 1 year at -20°C



Handling

Microcystin-LR is provided as a dried film in an amber vial, at the specified mass purchased and shown on the vial. It may not be visible in the vial, and should be dissolved in methanol or ethanol at a concentration no less than 75% organic solvent, with repeated rinsing of the sides of the vial with a pipet tip to fully dissolve the product. For biological applications, dissolved toxin should be diluted in an appropriate buffer for the application, reducing the organic solvent content to a level that it will not impact the application. For HPLC or other chemical applications, it should be diluted in an appropriate solvent or mobile phase. Once dissolved in the original organic solvent, the product is stable for ≥1 year when stored at -20°C.

Background

Protein Phosphatase	IC ₅₀ (nM)
1	0.1-1.7
2	0.04-0.1
3	200
4	0.15
5	1
6	0.1
7	No effect

Pereira, *et al.* Crit. Rev. Toxicol. 2010 41(2):83-110

Microcystin-LR is the most widely encountered and most thoroughly studied of the Microcystins, cyclic heptapeptides that have been shown to be liver toxins, and which are produced by *Microcystis aeruginosa* and other cyanobacteria. Microcystins have a unique β amino acid side chain termed “Adda,” and variability at the second and fourth amino acid positions in the Adda sequence is the basis of Microcystin nomenclature (*e.g.*, LR, LW, RR, YR, etc.). Adda is required for full biological toxicity. The cytotoxicity of Microcystins relates to their inhibitory effects upon protein phosphatases. The protein phosphatase IC₅₀ values for Microcystin-LR are shown in the Table to the left, and Microcystin-LR yielded an LD₅₀ of 43 μg/kg in mouse studies with intraperitoneal injection (Gupta *et al.*, Toxicology [2003] 188:285-296). Microcystin-LR is classified by the International Agency for Research on Cancer (IARC) as a [Group 2B](#) agent, meaning “possibly carcinogenic to humans.”