

# Microcystin-RR

## PP2A inhibitor

Microcystin-RR (MC-RR) is an Arg-Arg analog of Microcystin-LR (Prod. No. ALX-350-012). Although MC-RR was found to be up to 10-fold less toxic than MC-LR after intra-peritoneal injection in mice, it is both hepatotoxic and carcinogenic. It is a potent inhibitor of protein phosphatase 2A (PP2A).

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Cyanobacteria are photosynthetic prokaryotes mostly present in freshwater ecosystems. The increasingly frequent appearance of cyanobacteria blooms in lakes and rivers is linked to climate changes and human activities. Microcystins are a group of cyclic heptapeptide hepatotoxins produced by a number of cyanobacterial genera. The most notable of which, and namesake, is the widespread genus *Microcystis*. Structurally, all microcystins consist of the generalized structure cyclo(-D-Ala<sup>1</sup>-X<sup>2</sup>-D-MeAsp<sup>3</sup>-Y<sup>4</sup>-Adda<sup>5</sup>-D-Glu<sup>6</sup>-Mdha<sup>7</sup>-). X and Y are variable L-amino acids, D-MeAsp is D-erythro-β-methylaspartic acid and Mdha is N-methyldehydroalanine. Adda is the cyanobacteria unique C<sub>20</sub> β-amino acid 3-amino-9-methoxy-2,6,8-trimethyl-10-phenyl-deca-4,6-dienoic acid. Substitutions of the variable L-amino acids at positions 2 and 4 give rise to at least 21 known primary microcystin analogs and alterations in the other constituent amino acids result in more than 90 reported microcystins to date.

- Hepatotoxin
- Potent inhibitor of PP2A
- Cited in several water quality-related research articles

Citations: 42

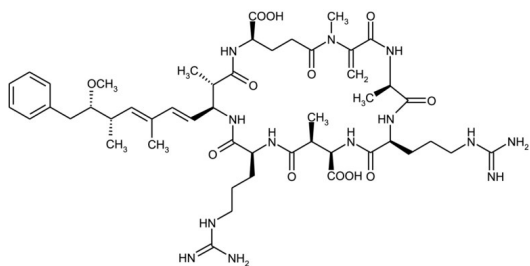
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## Ordering Information

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ALX-350-043-M001	1mg
ALX-350-043-C050	50µg
ALX-350-043-C100	100µg
ALX-350-043-C250	250µg
ALX-350-043-C500	500µg





## Handling & Storage

Use/Stability	As indicated on product label or CoA when stored as recommended.
Handling	For maximum product recovery after thawing, centrifuge the vial before opening the cap.
Long Term Storage	-20°C
Shipping	Ambient Temperature

## Regulatory Status

RUO - Research Use Only

## Product Details

Alternative Name	MC-RR
Appearance	Clear to whitish film adhered to inside of vial.
CAS	111755-37-4
Couple Target	Serine/threonine-protein phosphatase
Couple Type	Inhibitor
Formula	$C_{49}H_{75}N_{13}O_{12}$
Identity	Identity determined by MS.
MW	1038.2
Purity	≥95% (HPLC)
Solubility	Soluble in 80% aqueous methanol.
Source	Isolated from <i>Microcystis aeruginosa</i> .



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