

Microcystin-LA

Inhibitor of PP2A and calcineurin

Microcystin-LA (MC-LA) is an analog of microcystin-LR (Prod. No. ALX-350-012) with Ala substituted in place of Arg. MC-LA inhibits protein phosphatase 2A (PP2A) and calcineurin/protein phosphatase 3 (PP3) more potently than protein phosphatase 1 (PP1).

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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-Ala¹-X²-D-MeAsp³-Y⁴-Adda⁵-D-Glu⁶-Mdha⁷-). 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 C₂₀ 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.

Citations: 29

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Ordering Information

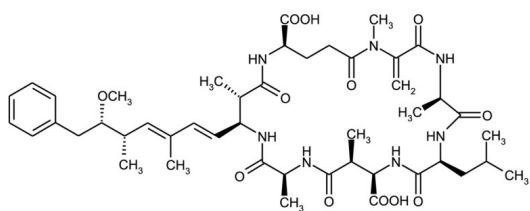
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ALX-350-096-M001	1mg
ALX-350-096-C025	25µg
ALX-350-096-C100	100µg

Manuals, SDS & CofA

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- Potent inhibitor of PP2A and Calcineurin
- Cited in several environment-related research articles



Handling & Storage

Use/Stability	As indicated on product label or CoA when stored as recommended. Stock solutions are stable for up to 6 months when stored at -20°C. Unstable at pH > 7.7.
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-LA
Appearance	Whitish film adhered to inside of the vial.
CAS	96180-79-9
Couple Target	Serine/threonine-protein phosphatase
Couple Type	Inhibitor
Formula	$C_{46}H_{67}N_7O_{12}$
Identity	Identity determined by MS.
MW	910.0
Purity	≥95% (HPLC)
RTECS	GT2805000
Solubility	Soluble in 100% ethanol or methanol.
Source	Isolated from <i>Microcystis aeruginosa</i> .



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