Microcystin-YR

Inhibitor of PP1 and PP2A

Microcystin-YR (MC-YR) is an analog of microcystin-LR (Prod. No. ALX-350-012) with Tyr substituted in place of Leu. As for all microcystins, the conjugated double bonds in the Adda moiety cause a characteristic absorption maximum at 238nm. The Tyr residue in position 2 of microcystin-YR confers an absorption maximum at 232nm. MC-YR is a potent inhibitor of eukaryotic protein phosphatases 1 and 2A and a useful reference compound for environmental analysis. The hydroxyl group of the Tyr residue may prove useful for linking MC-YR via conjugation to other chemicals. MC-YR inhibits the synthesis of proteases such as cathepsin D and L, and arginine aminopeptidase.

May require a license for import, please contact us for more information.

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^{1}-X^{2}-D-MeAsp^{3}-Y^{4}-Adda^{5}-D-Glu^{6}-Mdha^{7}-). 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_{20} 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 mycrocystins to date.

Citations: 56 View Online »

- Potent inhibitor of PP1 and PP2A
- Useful reference for environmental analyses
- Cited in several water quality-related research articles

Ordering Information

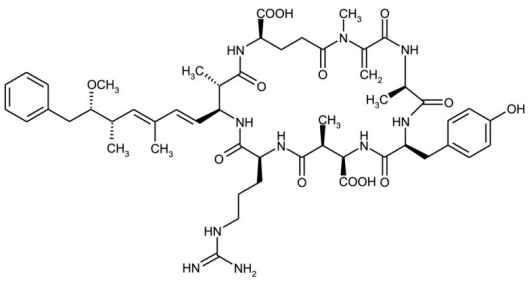
Order Online »

ALX-350-044-M001	1mg
ALX-350-044-C025	25µg

ALX-350-044-C100	100µg

Manuals, SDS & CofA

View Online »


COOH
CH3
O
HN
N
NH
H3C
O
O
CH2
H3C
O
OCH3
NH
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OH
CH3
CH3
H
N
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N
O
O
O
COOH
O
HN
HN
NH2


Enzo
Microcystin-YR
Cat. No.:ALX-350-044-M
Lot No.:L30764
Storage:-20° C
For Research Use Only

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-YR
Appearance	Whitish film adhered to inside of the vial.
CAS	101064-48-6
Couple Target	Serine/threonine-protein phosphatase
Couple Type	Inhibitor
Formula	$C_{52}H_{72}N_{10}O_{13}$
Identity	Identity determined by MS.
MW	1045.2
Purity	≥95% (HPLC)
Solubility	Soluble in DMSO, 100% ethanol, or 100% methanol.
Source	Isolated from *Microcystis aeruginosa*.

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