Microcystin-LR (Analytical Standard)

Inhibitor of PP1 and PP2A

Microycystin-LR is a naturally occuring heptapeptide ester hepatotoxin and has been seen to be one of the most toxic within the Microcystin family. Studies have also revealed this toxin can act as a tumor promoter by selectively inhibiting protein phosphatase 1 (PP1) and 2A (PP2A). PP2B is less sensitive and PP2C is not inhibited up to 4μM. This product is useful for affinity-purification of PP2A. It is not cell permeable except in liver cells, which appear to have a functional uptake system. Is absorbed by hepatocytes *via* the multispecific organic anion transporter. Does not induce any effects on mouse skin or human fibroblasts due to cell membranes impermeability. Has no effect on protein kinases. Less toxic than the more hydrophobic analogs microcystin-LY, -LW and -LF. Microcystin-LR has been frequently found as a contaminate to fresh-water lakes and ponds causing a major negative impact. This product can be used as an analytical standard (reference substance) for water testing. The product can also be used a very pure Microcystin-LR in studying its interaction with the protein phosphatases.

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

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: 33 View Online »

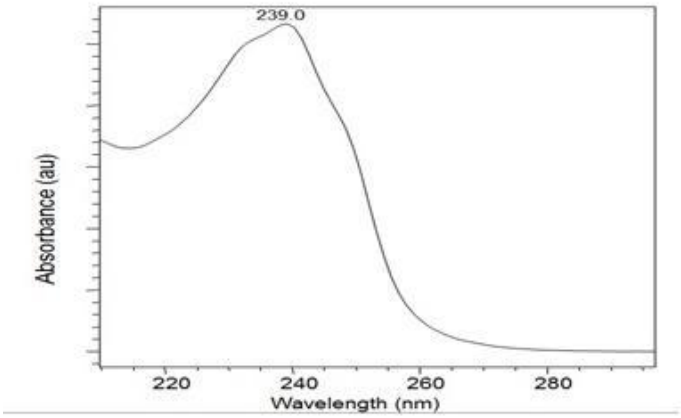
Ordering Information Order Online »

- Make it your standard today!
- Highest purity on the market!

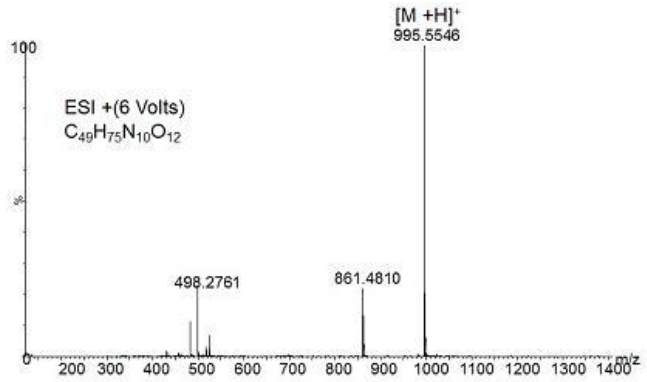
ALX-350-431-C010	10µg

Manuals, SDS & CofA

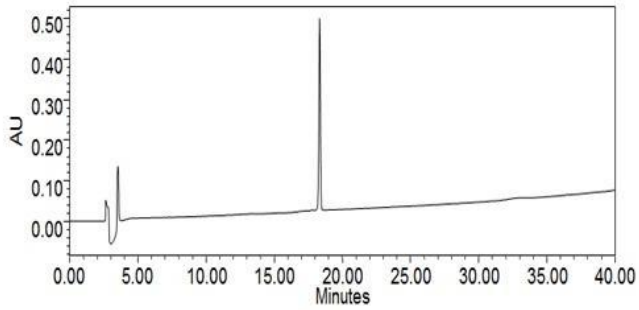
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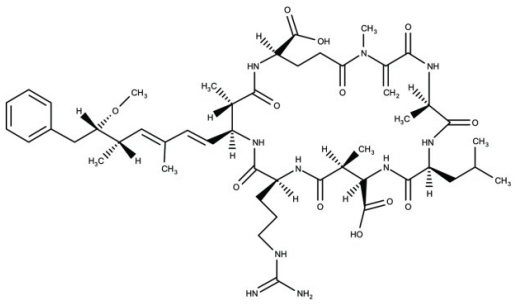
Microcystin-LR (UV-VIS) at 239nm



Microcystin- LR Mass Spectrometry



Microcystin- LR Reversed Phase HPLC (238nm)



Handling & Storage

Use/Stability	As indicated on product label or CoA when stored as recommended. Preparation of stock solution: Thaw vial. Centrifuge the vial for maximum recovery. Using a sterile syringe, draw the desired solvent (suggested solvent is methanol). Make sure that no bubbles are drawn. Inject 1.0ml of the desired solvent into the septum to obtain a concentration of 10µg/ml. Make sure that all the solvent has been injected prior to removing the syringe from the septum. Gently swirl the vial to get toxin into solution. If required, gently tap the bottom of the vial. Material is ready for analysis.Stock solutions are stable for up to 6 months when stored at -20°C. Unstable at pH >7.7.
Handling	Warm to room temperature before opening. Keep sterile. For maximum product recovery after thawing, centrifuge the vial before opening the cap.
Short Term Storage	-20°C
Long Term Storage	-20°C
Shipping	Dry Ice

Regulatory Status

RUO - Research Use Only

Product Details

Appearance	Whitish film adhered to inside of the vial.
CAS	101043-37-2
Couple Target	Serine/threonine-protein phosphatase
Couple Type	Inhibitor
Excitation Maximum	239nm
Formula	$C_{49}H_{74}N_{10}O_{12}$
Identity	Identity determined by MS.
MW	995.2
Purity	≥99% (HPLC)
Purity Detail	Flash Chromatography followed by HPLC

RTECS	GT2810000
Solubility	Soluble in 100% ethanol, methanol or DMSO.
Source	Isolated from *Microcystis aeruginosa*.

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