Cylindrospermopsin

Protein synthesis inhibitor

Cylindrospermopsin is a tricyclic alkaloid hepatotoxin produced by cyanobacteria. Cylindrospermopsin exhibits a completely different mechanism of toxicity than microcystins by targeting/inhibiting the synthesis of glutathione, proteins, and pyrimidine nucleotides. Cylindrospermopsin is considered to be genotoxic. It was shown to break double stranded DNA and reduce cell viability in HepG2 cells.

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.

- Hepatotoxic
- Protein synthesis inhibitor
- Cited in several environment-related research articles

Citations: 38 View Online »

Ordering Information

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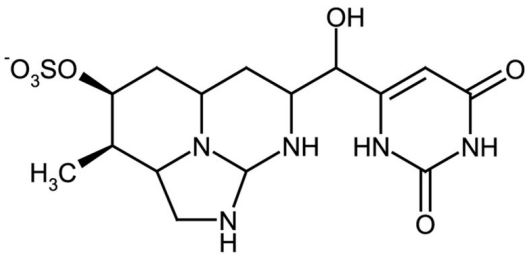
ALX-350-149-M001	1mg
ALX-350-149-C100	100µg
ALX-350-149-C500	500µg

Manuals, SDS & CofA

View Online »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Enzo
Cylindrospermopsi
Cat. No.: ALX-350-149-C
Lot No.: L30711
Storage: -20°C
For Research Use Only

Handling & Storage

Use/Stability	As indicated on product label or CoA when stored as recommended.
Long Term Storage	-20°C
Shipping	Ambient Temperature

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	EN-Cylindrospermopsin
Appearance	Glassy solid.
CAS	143545-90-8
Formula	$C_{15}H_{21}N_5O_7S$
Identity	Identity determined by MS.
MW	415.4
Purity	≥95% (HPLC)
RTECS	UV9104310
Solubility	Soluble in DMSO, 100% methanol, or water.
Source	Isolated from *Cylindrospermopsis raciborskii*.

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