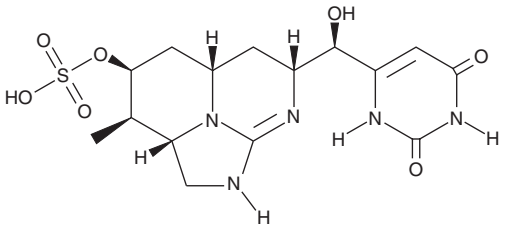
PRODUCT INFORMATION

Cylindrospermopsin

Item No. 43408

CAS Registry No.: 143545-90-8
Formal Name: 6-[(R)-hydroxy[(2aS,3R,4S,5aS,7R)-2,2a,3,4,5,5a,6,7-octahydro-3-methyl-4-(sulfooxy)-1H-1,8,8b-triazaacenaphthylen-7-yl]methyl]-2,4(1H,3H)-pyrimidinedione
MF: $C_{15}H_{21}N_5O_7S$
FW: 415.4
Purity: ≥98%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Cylindrospermopsin is supplied as a solid. A stock solution may be made by dissolving the cylindrospermopsin in the solvent of choice, which should be purged with an inert gas. Cylindrospermopsin is soluble in methanol.

Description

Cylindrospermopsin is a cyanotoxin that has been found in *C. raciborskii*.[1-3] It inhibits the activity of the UMP synthase complex in mouse liver homogenates with a K_i value of 10 µM.[1] Cylindrospermopsin inhibits protein synthesis and decreases glutathione (GSH) levels in primary rat hepatocytes (IC_{50}s = 1.28 and 2.38 µM, respectively) and induces DNA double-strand breaks in, and inhibits the proliferation of, HepG2 cells when used at a concentration of 0.5 µg/ml.[2,3] *In vivo*, cylindrospermopsin increases liver and testes weight, decreases red blood cell and plasma cholesterol levels, and decreases liver cholesterol levels when administered *via* the drinking water at a concentration of 0.6 mg/L.[1] It has been found in wastewater influent and freshwater fish.[4,5]

References

1. Reisner, M., Carmeli, S., Werman, M., *et al*. The cyanobacterial toxin cylindrospermopsin inhibits pyrimidine nucleotide synthesis and alters cholesterol distribution in mice. *Toxicol. Sci*. **82(2)**, 620-627 (2004).
2. Runnegar, M.T., Xie, C., Snider, B.B., *et al*. In vitro hepatotoxicity of the cyanobacterial alkaloid cylindrospermopsin and related synthetic analogues. *Toxicol. Sci*. **67(1)**, 81-87 (2002).
3. Straser, A., Filipic, M., Novak, M., *et al*. Double strand breaks and cell-cycle arrest induced by the cyanobacterial toxin cylindrospermopsin in HepG2 cells. *Mar. Drugs* **11(8)**, 3077-3090 (2013).
4. Hoeger, S.J., Shaw, G., Hitzfeld, B.C., *et al*. Occurrence and elimination of cyanobacterial toxins in two Augstalian drinking water treatment plants. *Toxicon* **43**, 639-649 (2004).
5. Skafi, M., Vo Duy, S., Munoz, G., *et al*. Occurrence of microcystins, anabaenopeptins and other cyanotoxins in fish from a freshwater wildlife reserve impacted by harmful cyanobacterial blooms. *Toxicon* **194**, 44-52 (2021).

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