

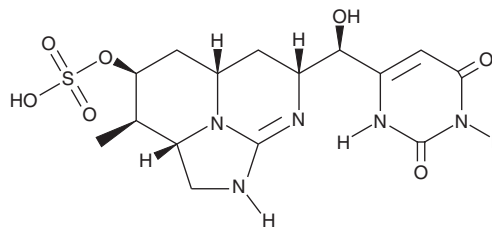
PRODUCT INFORMATION



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: $\geq 98\%$
Supplied as: A solid
Storage: $-20^{\circ}C$
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 $10 \mu M$.¹ Cylindrospermopsin inhibits protein synthesis and decreases glutathione (GSH) levels in primary rat hepatocytes (IC_{50} s = 1.28 and $2.38 \mu M$, respectively) and induces DNA double-strand breaks in, and inhibits the proliferation of, HepG2 cells when used at a concentration of $0.5 \mu g/ml$.^{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).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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