

# PRODUCT INFORMATION



## Picrotoxin

Item No. 20771

CAS Registry No.: 124-87-8

Formal Name: (1aR,2aR,3S,6R,6aS,8aS,8bR,9R)-hexahydro-2a-hydroxy-8b-methyl-9-(1-methylethenyl)-3,6-methano-8H-1,5,7-trioxacyclopenta[ij]cycloprop[a]azulene-4,8(3H)-dione compd. with (1aR,2aR,3S,6R,6aS,8aS,8bR,9S)-hexahydro-2a-hydroxy-9-(1-hydroxy-1-methylethyl)-8b-methyl-3,6-methano-8H-1,5,7-trioxacyclopenta[ij]cycloprop[a]azulene-4,8(3H)-dione

Synonyms:

Cocculin, NSC 403139

MF:  $C_{15}H_{18}O_7 \cdot C_{15}H_{16}O_6$

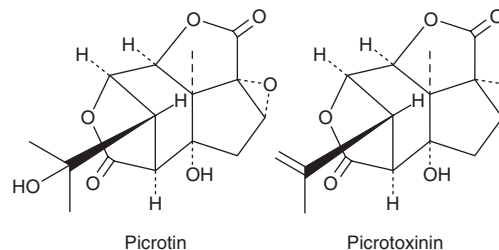
FW: 602.6

Purity:  $\geq 98\%$  (mixture of Picrotin and Picrotoxinin)

Supplied as: A crystalline solid

Storage:  $-20^{\circ}C$

Stability:  $\geq 4$  years



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

### Laboratory Procedures

Picrotoxin is supplied as a crystalline solid. A stock solution may be made by dissolving the picrotoxin in the solvent of choice, which should be purged with an inert gas. Picrotoxin is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of picrotoxin in ethanol is approximately 15 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Picrotoxin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, picrotoxin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Picrotoxin has a solubility of approximately 0.25 mg/ml in a 1:3 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

### Description

Picrotoxin is a natural plant-derived poison that acts as a selective GABA<sub>A</sub> receptor antagonist.<sup>1,2</sup> It is functional *in vivo* and is used to study the role of GABA<sub>A</sub> receptors in the central nervous system as well in the periphery.<sup>3,4</sup> Picrotoxin induces seizures in adult and immature animals and is used to study GABA<sub>A</sub>-dependent seizures and drugs that block this pathway.<sup>5</sup>

### References

1. Bowery, N.G., Bettler, B., Froestl, W., *et al.* International union of pharmacology. XXXIII. Mammalian  $\gamma$ -aminobutyric acid<sub>B</sub> receptors: Structure and function. *Pharm. Rev.* **54(2)**, 247-264 (2002).
2. Newland, C.F. and Cull-Candy, S.G. On the mechanism of action of picrotoxin on GABA receptor channels in dissociated sympathetic neurones of the rat. *J. Physiol.* **447**, 191-213 (1992).
3. Jiang, X., Fuller, T.W., Bandari, J., *et al.* Contribution of GABA<sub>A</sub>, glycine, and opioid receptors to sacral neuromodulation of bladder overactivity in cats. *J. Pharmacol. Exp. Ther.* **359(3)**, 436-441 (2016).
4. Kistsen, V., Evstigneev, V., Dubovik, B., *et al.* The effects of repetitive transcranial magnetic stimulation on picrotoxin-induced convulsions in mice. *Adv. Clin. Exp. Med.* **25(2)**, 317-325 (2016).
5. Velisek, L., Veliskova, J., and Moshe, S.L. Developmental seizure models. *Ital. J. Neurol. Sci.* **16(1-2)**, 127-133 (1995).

#### 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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