

Product Data Sheet

Product Name: Verruculogen

Cat. No.: GC17001

Chemical Properties

Cas. No. 12771-72-1

Chemical Name (5R,10S,10aR)-1,10,10a,14,14aS,15bS-hexahydro-10,10a-dihydroxy-7-methoxy-2,2-dimethyl-5-(2-methyl-1-propen-1-yl)-5H,12H-3,4-dioxo-5a,11a,15a-triazacyclooct[1m]indeno[5,6-b]fluorene-11,15(2H,13H)-dione

SMILES O=C1N2[C@](CCC2)([H])C(N3[C@@H]4C5=C(C(C=CC(OC)=C6)=C6N5[C@@H](/C=C(C)/C)OOC(C)(C)C4)[C@H](O)[C@]31O)=O

Formula C₂₇H₃₃N₃O₇ M.Wt 511.6

Solubility Soluble in ethanol; Soluble in methanol; Soluble in DMSO; Soluble in dimethyl formamide
Storage Store at -20°C; protect from light

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

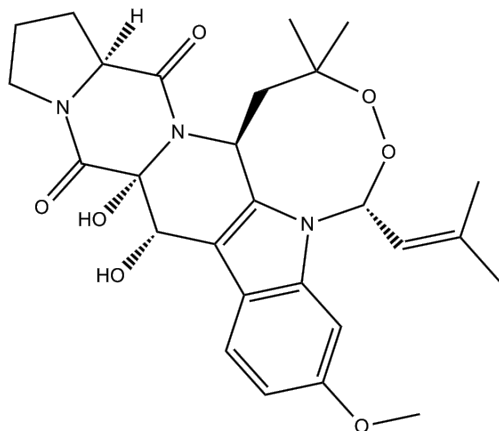
Caution: Product has not been fully validated for medical applications. For research use only.

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Structure



Background

Verruculogen is a Maxi-K potassium channels inhibitor.

Maxi-K, a potassium channel characterized by their large conductance for potassium ions through cell membranes, is activated by changes in membrane electrical potential and/or by increases in concentration of intracellular calcium ion. Maxi-K channels are critical for the regulation of several key physiological processes, such as smooth muscle tone and neuronal excitability.

In vitro: In a previous study, it was found that aflatrem, paspalitrem A, paspalitrem C, penitrem A, and paspalinine could inhibit the binding of [125I]charybdotoxin to maxi-K channels in bovine aortic smooth muscle sarcolemmal membranes. Whereas, verruculogen enhanced toxin binding. Despite their different effects on binding of [125I]charybdotoxin to maxi-K channels, all tested compounds including verruculogen were able to potently inhibit maxi-K channels in electrophysiological experiments, and other types of voltage-dependent or Ca(2+)-activated K⁺ channels examined were not affected [1].

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In vivo: In an animal study, the mechanism of the genesis of tremor induced by verruculogen was investigated. It was found that atropine, glycine, mephenesin, and penicillamine with proven efficacy in relieving tremor of varied etiology, failed to modify verruculogen induced tremor. Oxyaminoacetic acid, which raises the CNS levels of GABA, and beta (chlorphenyl) gamma aminobutyric acid, which passes the hematoencephalic barrier, completely or partly relieved tremor and other verruculogen-induced symptoms, depending on the dose of the verruculogen administered. Picrotoxin, a GABA antagonist, increased the effect of verruculogen in the tested animals [2].

Clinical trial: So far, no clinical study has been conducted.

References:

- [1] Knaus, H. G.,McManus, O.B.,Lee, S.H., et al. Tremorgenic indole alkaloids potently inhibit smooth muscle high-conductance calcium-activated potassium channels. *Biochemistry* 33(19), 5819-5828 (1994).
- [2] Hotujac L, Stern P. Pharmacological examination of verruculogen induced tremor. *Acta Med Iugosl.* 1974;28(3):223-9.

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