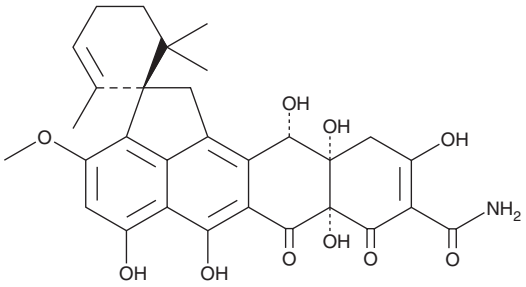
PRODUCT INFORMATION

Viridicatumtoxin

Item No. 25480

CAS Registry No.: 39277-41-3
Formal Name: (1R,7'aR,11'aR,12'R)-*rel*-(-)-7',7'a,8',11',11'a,12'-hexahydro-5',6',7'a,10',11'a,12'-hexahydroxy-3'-methoxy-2,6,6-trimethyl-7',8'-dioxo-spiro[2-cyclohexene-1,2'(1'H)-cyclopenta[de]naphthacene]-9'-carboxamide
Synonym: NSC 159628
MF: $C_{30}H_{31}NO_{10}$
FW: 565.6
Purity: ≥95%
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

Viridicatumtoxin is supplied as a solid. A stock solution may be made by dissolving the viridicatumtoxin in the solvent of choice, which should be purged with an inert gas. Viridicatumtoxin is soluble in organic solvents such as ethanol, methanol, DMSO, and dimethyl formamide.

Viridicatumtoxin is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Viridicatumtoxin in a mycotoxin originally isolated from *Penicillium* that has diverse biological activities, including antimicrobial, cytotoxic, and toxic properties.[1-3] It inhibits the growth of *B. subtilis*, *M. luteus*, *C. perfringens*, *B. fragilis*, and methicillin-resistant *S. aureus* (MRSA; MICs = 0.39-1.56 µg/ml), as well as *C. albicans*, *S. cerevisiae*, *M. racemosus*, *A. niger*, and *P. chrysogenum* (MICs = 6.2-25 µg/ml), but has no activity against *M. smegmatis*, *E. coli*, *K. pneumoniae*, *P. aeruginosa*, or *S. marcescens* (MICs = >100 µg/ml).[3] Viridicatumtoxin inhibits the production of polyprenyl alcohols by *S. aureus* undecaprenyl pyrophosphate (UPP) synthase, *E. coli* octaprenyl pyrophosphate synthase (OPS), and *S. cerevisiae* dehydrodolichyl pyrophosphate (DedoIPP) synthase *in vitro* (IC_{50}s = 3.1, 21, and 71 µM, respectively). It has cytotoxic effects against human Jurkat T (IC_{50} = 4.92 µM), chronic lymphocytic leukemia (CLL; LC_{50} = 0.7-3.5 nM), and bone marrow-derived HS-5 stromal cells.[2,3] Viridicatumtoxin is toxic to rats and mice when administered intraperitoneally (LD_{50}s = 80 and 90 mg/kg, respectively) and to rats when administered *via* gastric intubation (LD_{50} = 122.4 mg/kg), but not to rats or mice when administered orally or through subcutaneous injection.[1,4]

References

1. Hutchinson, R.D., Steyn, P.S., and Van Rensburg, S.J. *Toxicol. Appl. Pharmacol.* **24(30)**, 507-509 (1973).
2. Bladt, T.T., Dürr, C., Knudsen, P.B., *et al. Molecules* **18(12)**, 14629-14650 (2013).
3. Inokoshi, J., Nakamura, Y., Komada, S., *et al. J. Antibiot. (Tokyo)* **69(11)**, 798-805 (2016).
4. Bendele, A.M., Carlton, W.W., Nelson, G.E., *et al. Toxicol. Lett.* **22(3)**, 287-291 (1984).

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