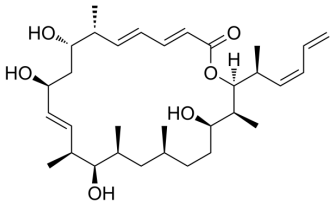
Dictyostatin

Cat. No.:	HY-N10660
CAS No.:	156312-07-1
Molecular Formula:	$C_{32}H_{52}O_6$
Molecular Weight:	532.75
Target:	Microtubule/Tubulin
Pathway:	Cell Cycle/DNA Damage; Cytoskeleton
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

Dictyostatin ((-)-Dictyostatin; Dictyostatin 1) is a potent microtubule stabilizing agent. Dictyostatin also is a anti-cancer agent. Dictyostatin shows antiproliferative activity. Dictyostatin has the potential for the research of tauopathies[1][2][3].

In Vitro

Dictyostatin (0-100 nM; 72-120 h) shows antiproliferative activity in cancer cells[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

Cell Line:	A549, EpoB40/A549, 1A9, 1A9/PTX10, 1A9/PTX22 cells
Concentration:	0-100 nM
Incubation Time:	72-120 h
Result:	Showed antiproliferative activity with GI_{50}s of 0.5, 5.1, 1.3, 18.8, 5.1 nM for A549, EpoB40/A549, 1A9, 1A9/PTX10, 1A9/PTX22 cells, respectively.

In Vivo

Dictyostatin (0.3, 1 mg/kg; i.p.; once-weekly for 3 months) improves MT density and reduced axonal dystrophy in mouse[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	6-month old male B6 PS19 tau Tg mice[3]
Dosage:	0.3, 1 mg/kg
Administration:	I.p.; once-weekly for 3 months
Result:	Improved MT density and reduced axonal dystrophy, with a reduction of tau pathology and a trend toward increased hippocampal neuron survival relative to vehicle-treated PS19 mice, caused a significant reduction of insoluble TauAcK280.

REFERENCES

[1]. George R. Pettit, et al. Isolation and structure of the cancer cell growth inhibitor dictyostatin 1. J. Chem. Soc., Chem. Commun., 1995, 2373-2670.

[2]. Vollmer LL, et al. A simplified synthesis of novel dictyostatin analogues with in vitro activity against epothilone B-resistant cells and antiangiogenic activity in zebrafish embryos. Mol Cancer Ther. 2011 Jun;10(6):994-1006.

[3]. Makani V, et al. Evaluation of the brain-penetrant microtubule-stabilizing agent, dictyostatin, in the PS19 tau transgenic mouse model of tauopathy. Acta Neuropathol Commun. 2016 Sep 29;4(1):106.

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