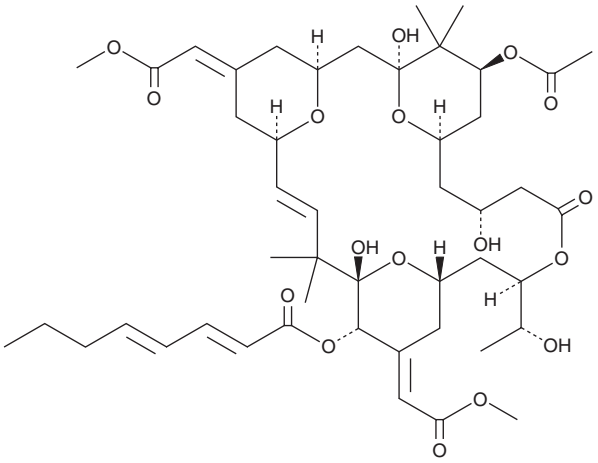
PRODUCT INFORMATION

Bryostatin 1

Item No. 14802



CAS Registry No.:	83314-01-6
Formal Name:	(1S,3S,5Z,7R,8E,11S,12S,13E,15S,17R,21R,23R,25S)-25-(acetyloxy)-1,11,21-trihydroxy-17-[(1R)-1-hydroxyethyl]-5,13-*bis*(2-methoxy-2-oxoethylidene)-10,10,26,26-tetramethyl-19-oxo-18,27,2-8,29-tetraoxatetracyclo[21.3.1.1^{3,7}.1^{11,15}]nonacos-8-en-12-yl-(2E,4E)-2,4-octadienoic acid ester
Synonym:	NSC 339555
MF:	$C_{47}H_{68}O_{17}$
FW:	905.0
Purity:	≥98%
Supplied as:	A lyophilized powder
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Animal/*Bugula neritina*

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

Laboratory Procedures

Bryostatin 1 is supplied as a lyophilized powder. A stock solution may be made by dissolving the bryostatin 1 in the solvent of choice, which should be purged with an inert gas. Bryostatin 1 is soluble in organic solvents such as ethanol and DMSO. The solubility of bryostatin 1 in these solvents is approximately 25 mg/ml.

Description

Bryostatin 1 is a marine macrolide that has been found in *B. neritina* and has diverse biological activities.[1-5] It binds to PKCα, PKCβ1, PKCγ, PKCδ, PKCε, PKCη, and PKCθ (K_is = 0.8-3.0 nM) and induces PKC activation or inhibition in cancer cells in a concentration-dependent manner.[1,2] Bryostatin 1 (50 nM) reduces the production of IL-2 and increases the production of IL-10 in LPS-stimulated mouse bone marrow-derived dendritic cells (BMDCs).[1] It decreases cell surface levels of CD4 and chemokine (C-C motif) receptor 5 (CCR5) and reduces HIV-1 infectivity in isolated human monocyte-derived macrophages.[3] *In vivo*, bryostatin 1 (30 µg/kg) reduces spinal cord and brain T cell infiltration and disease severity in a mouse model of experimental autoimmune encephalomyelitis (EAE).[4] It also decreases blast-induced increases in blood-brain barrier (BBB) permeability in a rat model of traumatic brain injury (TBI) when administered at a dose of 2.5 mg/kg.[5]

References

1. Abramson, E., Hardman, C., Shimizu, A.J., *et al. Cell. Chem. Biol.* **28(4),** 537-545 (2021).
2. Kortmansky, J. and Schwartz, G.K. *Cancer Invest.* **21(6),** 924-936 (2003).
3. Hany, L., Turmel, M.-O., Barat, C., *et al. J. Virol.* **96(4),** e0195321 (2022)
4. Kornberg, M.D., Smith, M.D., Shirazi, H.A., *et al. Proc. Natl. Acad. Sci. U.S.A.* **115(9),** 2186-2191 (2018).
5. Lucke-Wold, B.P., Logsdon, A.F., Smith, K.E., *et al. Mol. Neurobiol.* **52(3),** 1119-1134 (2015).

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