

Product Data Sheet

Product Name: Jasplakinolide

Cat. No.: GC17312

Chemical Properties

Cas. No. 102396-24-7

Chemical Name (4R,7R,10S,13R,17R,19S,E)-7-((2-bromo-1H-indol-3-yl)methyl)-4-(4-hydroxyphenyl)-8,10,13,15,17,19-hexamethyl-1-oxa-5,8,11-triazacyclononadec-15-ene-2,6,9,12-tetraone

SMILES BrC1=CC=CC=C2C1=CC=C2C3=CC(=CC=C3O)CC(O[C@@H](C)C[C@@H](C)C=C(C)C[C@@H](C)C(N[C@H]4C=O)C(=O)C(=O)C(=O)N(C)C4=O

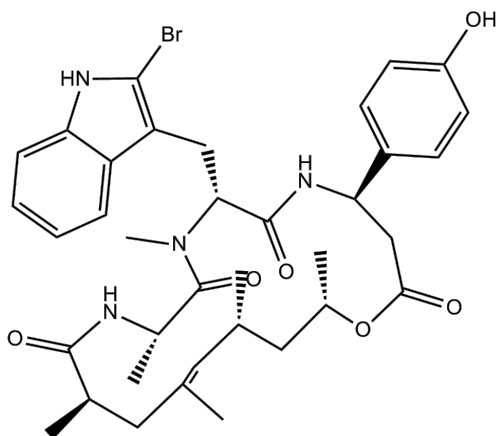
Formula $C_{36}H_{45}BrN_4O_6$ M.Wt 709.67

Solubility DMSO: Soluble; Ethanol: Soluble; Methanol: Soluble 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.

Structure



Background

Jasplakinolide is a natural macrocyclic peptide first isolated from a marine sponge. It potently inhibits the proliferation of PC3 prostate carcinoma cells ($IC_{50} = 35 \text{ nM}$) by binding F-actin ($K_D = 15 \text{ nM}$).^[1] This binding of jasplakinolide to actin, which is competitive with phalloidin, stabilizes actin filaments in

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vitro but disrupts actin filaments and induces irregular polymerization of monomeric actin in vivo.[1], [2] This compound is used to investigate the role of actin in diverse cellular roles, such as motility, transport, and development.[3],[4]

Reference:

- [1]. Bubb, M.R., Senderowicz, A.M.J., Sausville, E.A., et al. Jasplakinolide, a cytotoxic natural product, induces actin polymerization and competitively inhibits the binding of phalloidin to F-actin. The Journal of Biological Chemistry 269(21), 14869-14871 (1994).
- [2]. Bubb, M.R., Spector, I., Beyer, B.B., et al. Effects of jasplakinolide on the kinetics of actin polymerization. An explanation for certain in vivo observations. The Journal of Biological Chemistry 275(7), 5163-5170 (2000).
- [3]. Van Goor, D., Hyland, C., Schaefer, A.W., et al. The role of actin turnover in retrograde actin network flow in neuronal growth cones. PLoS One 7(2), (2012).
- [4]. Zhang, X., Cui, X., Cheng, L., et al. Actin stabilization by jasplakinolide affects the function of bone marrow-derived late endothelial progenitor cells. PLoS One 7(11), (2012).

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