

Product Data Sheet

Product Name: SHIP1-IN-1

Cat. No.: GC79749

Chemical Properties

Cas. No. 3027375-00-1

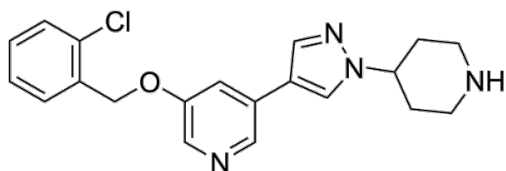
Formula $C_{20}H_{21}ClN_4O$ M.Wt 368.86

Solubility DMSO: 50 mg/mL (135.55 mM; Need ultrasonic) Storage Store at 4°C, away from moisture

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

SHIP1-IN-1 is an orally active, blood-brain barrier-permeable SHIP1 ligand. SHIP1-IN-1 exhibits IC₅₀

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

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values of 384 μM and 177 μM against human SHIP1, and an IC_{50} value of 379 μM against murine SHIP1. SHIP1-IN-1 alters the binding state of SHIP1 to phosphatidylinositol membranes, and regulates phosphoinositide pools and phosphorylated AKT levels. SHIP1-IN-1 enhances the uptake of myelin/membrane fragments and amyloid proteins by microglia, alters gene expression and reduces IL-1 β levels. SHIP1-IN-1 can be used in studies related to Alzheimer's disease [1] [2].

In Vivo, SHIP1-IN-1 (compound 32) (150 mg/kg; p.o.; three times at 12-h intervals) achieves brain exposure that alters IL-1 β levels, indicating modulation of microglial activation and neuroinflammation in an amyloidosis mouse model of Alzheimer's disease[1].

In Vitro, SHIP1-IN-1 (compound 32) inhibits the human two-domain SHIP1 protein construct with an IC_{50} of 384 μM , the human five-domain SHIP1 protein construct with an IC_{50} of 177 μM , and the murine five-domain SHIP1 protein construct with an IC_{50} of 379 μM [1]. SHIP1-IN-1 (1.0-10 μM) modulates the phosphoinositide association profile of the human five-domain SHIP1 protein, increasing relative binding to PI(3,4)P2 at higher concentrations[1]. SHIP1-IN-1 (60 min treatment at 37 °C; 3 min heating at 44.2 °C) engages full-length SHIP1 in HMC3 cells, reducing protein thermal stability with an AC_{50} of 40.4 μM [1]. SHIP1-IN-1 (15 min) modulates proximal SHIP1-dependent AKT signaling in IL-4-conditioned THP-1 cells, reducing the pAKT (S473)/tAKT ratio with an IC_{50} of 4.0 μM and the pAKT (T308)/tAKT ratio with an IC_{50} of 5.3 μM [1]. SHIP1-IN-1 enhances pHrodo-myelin/membrane debris uptake in both BV2 murine microglia (EC_{50} = 0.777 μM) and primary murine microglia (EC_{50} = 0.484 μM), while reducing cell count and nuclear intensity with IC_{50} values of 3.45 and 6.46 μM in BV2 cells, and 5.65 and 19.4 μM in primary microglia, respectively[1]. SHIP1-IN-1 (50 nM-950 μM ; 20 min pre-incubation with enzyme, 10 min reaction with substrate) inhibits purified SHIP1 Ptase-C2 domain activity with an IC_{50} of 302 μM [2]. SHIP1-IN-1 (Example 9) increases phagocytosis, reduces cell count, and alters nuclear intensity in primary mouse microglia in an in vitro high-content imaging assay[2].

References:

[1]. Jesudason CD, et al. Optimization and Characterization of SHIP1 Ligands for Cellular Target Engagement and Activity in Alzheimer's Disease Models. bioRxiv [Preprint]. 2026 Jan 2:2025.12.31.697127.

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[2]. Richardson TI, et al. Crizotinib analogues as ship1 inhibitors useful to treat alzheimer's diseases. WO, WO2024015759A1. 2024-01-18.

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