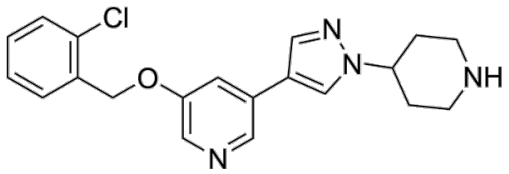
Product Data Sheet

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 IC_{50}

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-1β 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-1β 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 AC50 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 (EC50 = 0.777 μM) and primary murine microglia (EC50 = 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.

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