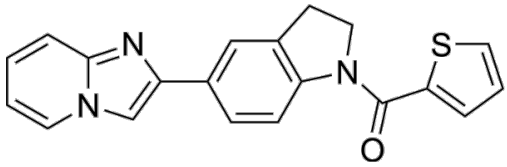
Product Data Sheet

Product Name: As48
Cat. No.: GC79422

Chemical Properties

Cas. No.	1214405-38-5		
Formula	$C_{20}H_{15}N_3OS$	M.Wt	345.42
Solubility	DMSO: 1 mg/mL (2.90 mM; ultrasonic and warming and heat to 60°C)	Storage	Store at 4°C, away from moisture and 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

As48 is a selective TREM2 agonist with a K D value of 12.48 μM in TRIC binding assay. As48 binds near the TREM2 cleavage region, forms hydrogen bonds with Gly68, reduces conformational flexibility in regions 58-102, restricts protease accessibility to the cleavage site. As48 activates SYK phosphorylation, enhances microglial phagocytosis, and induces downstream calcium signaling in TREM2-expressing cells. As48 inhibits TREM2 ectodomain shedding without affecting ADAM10/17 protease activities. As48 can be used for the research of Alzheimer's disease [1].

Caution: Product has not been fully validated for medical applications. For research use only.
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In Vitro, As48 (0.1-1000 μM; 10 min) binds directly to recombinant human TREM2 protein with a K0 of 12.48 μM, as measured by TRIC binding assay[1]. As48 (0.01-100 μM; 10 min) binds to recombinant human TREM2 with a KD of 13.8 μM, and binds 7-fold more weakly to recombinant human TREM1 (KD = 97.92 μM), as measured by MST binding assay[1]. As48 (30 μM; 20 min) increases the thermal stability of recombinant human TREM2 protein by +3.86°C, as measured by thermal shift assay[1]. As48 (1.23-100 μM) binds directly to biotinylated recombinant human TREM2 protein with a KD of 29.5 μM, as measured by SPR binding assay[1]. As48 (0-300 μM; overnight) exhibits minimal cytotoxicity in HMC3 human microglial cells, with no significant viability loss at concentrations up to 100 μM, as measured by MTS assay[1]. As48 (5-100 μM; 5-60 min) activates TREM2 signaling in HEK293-hTREM2/DAP12 cells by inducing dose- and time-dependent SYK phosphorylation[1]. As48 (0.3-30 μM; 10 min) induces TREM2-dependent intracellular calcium mobilization in HEK293-hTREM2/DAP12 cells[1]. As48 (0.3-30 μM; 0-120 min) activates TREM2 signaling in HMC3 TREM2 OE human microglial cells by inducing dose- and time-dependent SYK phosphorylation[1]. As48 (25 μM; 30 min) enhances phagocytic activity in BV2 murine microglial cells by twofold compared to vehicle control, as measured by fluorescent latex bead uptake assay[1]. As48 (1-30 μM; 18 h) inhibits TREM2 ectodomain shedding in HEK293-TREM2 OE cells in vitro in a dose-dependent manner[1]. As48 (10-300 μM; 30 min) does not inhibit the proteolytic activity of recombinant human ADAM10 or ADAM17 at concentrations up to 300 μM, as measured by fluorogenic protease activity assay[1].

References:

[1]. Cho S, et al. As48, a first-in-class dual-function TREM2 modulator: Receptor activation and shedding inhibition. Biomed Pharmacother. 2025;193:118862.

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