

Product Data Sheet

Product Name: As48
Cat. No.: GC79422

Chemical Properties

Cas. No. 1214405-38-5

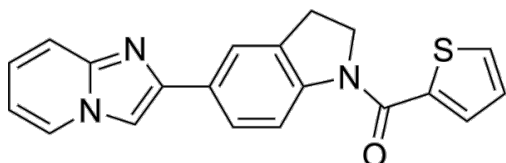
Formula $C_{20}H_{15}N_3OS$ M.Wt 345.42

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 sizes: ship with RT, or blue ice upon request.

Structure



Background

As48 is a selective TREM2 agonist with a K_D value of 12.48 μ M 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 μ M; 10 min) binds directly to recombinant human TREM2 protein with a K_D of 12.48 μ M, as measured by TRIC binding assay^[1]. As48 (0.01-100 μ M; 10 min) binds to recombinant human TREM2 with a K_D of 13.8 μ M, and binds 7-fold more weakly to recombinant human TREM1 (K_D = 97.92 μ M), as measured by MST binding assay^[1]. As48 (30 μ M; 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 μ M) binds directly to biotinylated recombinant human TREM2 protein with a K_D of 29.5 μ M, as measured by SPR binding assay^[1]. As48 (0-300 μ M; overnight) exhibits minimal cytotoxicity in HMC3 human microglial cells, with no significant viability loss at concentrations up to 100 μ M, as measured by MTS assay^[1]. As48 (5-100 μ M; 5-60 min) activates TREM2 signaling in HEK293-hTREM2/DAP12 cells by inducing dose- and time-dependent SYK phosphorylation^[1]. As48 (0.3-30 μ M; 10 min) induces TREM2-dependent intracellular calcium mobilization in HEK293-hTREM2/DAP12 cells^[1]. As48 (0.3-30 μ M; 0-120 min) activates TREM2 signaling in HMC3 TREM2 OE human microglial cells by inducing dose- and time-dependent SYK phosphorylation^[1]. As48 (25 μ M; 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 μ M; 18 h) inhibits TREM2 ectodomain shedding in HEK293-TREM2 OE cells in vitro in a dose-dependent manner^[1]. As48 (10-300 μ M; 30 min) does not inhibit the proteolytic activity of recombinant human ADAM10 or ADAM17 at concentrations up to 300 μ M, 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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