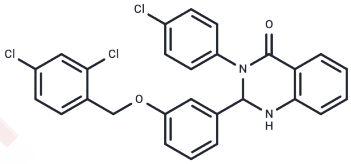
Data Sheet (Cat.No.T211819)

TargetMol

GL64

Chemical Properties



CAS No. : 488801-10-1

Formula: C27H19Cl3N2O2

Molecular Weight: 509.81

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	GL64 is a selective agonist of ADGRD1 with an EC50 of 3.98 μM. It shows low selectivity for the subtypes ADGRD2, ADGRG5, ADGRG6, CELSR1, CELSR2, CELSR3, and ADGRG4. GL64 activates ADGRD1 by mimicking the satchel sequence. It regulates osteoclast maturation through the cAMP-PKA-NFATC1 pathway. Both in vivo and in vitro, GL64 effectively inhibits osteoclastogenesis and prevents bone loss. This compound is suitable for research into osteoclast-related diseases.
Targets(IC50)	Others,Endogenous Metabolite
In vitro	GL64, at a concentration of 10 μM, enhances CRE-luciferase activity in HEK293T cells overexpressing ADGRD1 by more than 1.5 times. It also elevates CRE-luciferase and endogenous adenosine cAMP levels in wild-type MEFs, but does not affect Adgrd1−/− cells. GL64, in the range of 0-100 μM, does not increase CRE-luciferase activity in HEK293T cells overexpressing adhesion GPCRs (such as ADGRD2, ADGRG5, ADGRG6, CELSR1, CELSR2, CELSR3, and ADGRG4) or activate non-adhesion GPCRs (including GPR68, NPFFR1, GPR183, and GPRC5B). In ADGRD1-overexpressing HEK293T cells treated with the satchel peptide, GL64 exhibits weak agonist activity on ADGRD1 (EC50 = 16.89 μM). Notably, GL64 at 10 μM over 6 days inhibits the differentiation of male wild-type bone marrow-derived macrophages (BMMs) into mature osteoclasts, a process unaffected in Adgrd1−/− BMMs. During osteoclast maturation in male mice, GL64 at 10 μM over 6 days downregulates the mRNA expression levels of Dc-stamp, Acp5, and Nfatc1. Additionally, GL64 at 30 μM raises endogenous cAMP levels in male BMMs. With a concentration of 10 μM over 2 days, GL64 reduces NFATC1 nuclear localization in BMMs.
In vivo	Administering GL64 at a dosage of 30 mg/kg through intraperitoneal injection once daily for four weeks effectively mitigates excessive osteoclast activity and bone loss in a postmenopausal osteoporosis mouse model induced by ovariectomy (OVX).

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.9615 mL	9.8076 mL	19.6152 mL
5 mM	0.3923 mL	1.9615 mL	3.923 mL
10 mM	0.1962 mL	0.9808 mL	1.9615 mL
50 mM	0.0392 mL	0.1962 mL	0.3923 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.