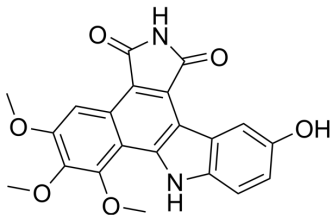
BMP agonist 1

Cat. No.:	HY-155705
Molecular Formula:	$C_{21}H_{16}N_2O_6$
Molecular Weight:	392.36
Target:	TGF-β Receptor; GSK-3; β-catenin
Pathway:	TGF-beta/Smad; PI3K/Akt/mTOR; Stem Cell/Wnt
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description

BMP agonist 1 (compound 2 b) is a small-molecule agonist of bone morphogenic protein (BMP). BMP induces C2C12 cell differentiation with BMP and highly depends on active BMP signaling. BMP agonist 1 inhibits GSK3β, increases β-catenin signaling and synergistically regulates Id2and Id3 expression. BMP agonist 1 is used in diseases and defects of the skeleton research[1].

In Vitro

BMP agonist 1 (0.01-10 μM, 24 h) reduces the proliferation of C2C12 cells[1].
BMP agonist 1 (0.5-1 μM, 2 h) inhibits GSK3β, increases β-catenin signaling and synergistically regulates Id2 and Id3 expression in C2C12 cells[1].
BMP agonist 1 (0.01-10 μM) potently promotes the osteogenic differentiation (Alp activity) of the canonical BMP potentiator Chromenone 1 (HY-143891) in C2C12 cells when in combination with Chromenone 1 (0.5−1 μM)[1].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1]

Cell Line:	C2C12 cells
Concentration:	0.01-10 μM
Incubation Time:	24, 72 h
Result:	Differentiaed in C2C12 osteoblast at the low-dose BMP-4 (7.5 ng/mL). Reduced the cell numbers and stopped the proliferation at higher concentrations. Highly induced Id1 and Id3, elevated Runx2 levels.

Cell Differentiation Assay[1]

Cell Line:	C2C12 cells
Concentration:	0.01-10 μM (in combination with (0.05, 0.2, 0.5, or 1 μM Chromenone 1)
Incubation Time:	
Result:	Highly overadditive effects and increased potency with Chromenone 1. Reached the highest synergy scores (i.e., delta scores) at a concentration of 0.3 μM with 0.5−1 μM Chromenone 1.

REFERENCES

[1]. Riege D, et al. Identification of Maleimide-Fused Carbazoles as Novel Noncanonical Bone Morphogenetic Protein Synergizers. ACS Pharmacol Transl Sci. 2023 Jul 19;6(8):1207-1220.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA