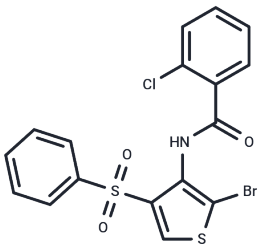
Data Sheet (Cat.No.T40795)

TargetMol

BNTA

Chemical Properties



CAS No. : 685119-25-9

Formula: C17H11BrClNO3S2

Molecular Weight: 456.76

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	BNTA is a potent extracellular matrix (ECM) modulator. In a rat model of arthritis, BNTA modulates arthritis by promoting the synthesis of cartilage structural molecules on chondrocytes through the induction of superoxide dismutase 3 (SOD3) and regulating chondrogenesis through superoxide anion elimination.
Targets(IC50)	Reactive Oxygen Species,ROS
In vitro	BNTA (0.01-10 μM; 1-7 days) exhibits no reduction in cell viability for human osteoarthritis chondrocytes and primary chondrocytes isolated from rats.[1] BNTA (0.1 μM; 2 days) induces a significant elevation in SOX9 protein expression. Notably, BNTA markedly enhances the protein levels of COL2A1 and SOX9 in rat osteoarthritis (OA) chondrocytes induced by IL1β.[1] BNTA (0.01-10 μM; 6 hours) enhances the expression levels of extracellular matrix (ECM) -related genes, including COL2A1, ACAN, proteoglycan 4 (PRG4), and SRY-box 9 (SOX9) in human osteoarthritis (OA) chondrocytes. In IL1β-induced rat OA chondrocytes, BNTA elevates Col2a1, Acan, Prg4, and Sox9 mRNA levels, with the most significant effects observed around 0.1 μM.[1] BNTA (10 μM; 5 days) increases proteoglycan staining in ATDC5 cells.[1] BNTA (0.01-1μM; 2 or 3 weeks) enhances anabolism and inhibits inflammatory response in osteoarthritis cartilage explants.[1]
In vivo	BNTA (0.015-1.5 mg/kg; intra-articular injection; twice a week for 4 and 8 weeks; Male SD rats) was well tolerated and reduced post-traumatic osteoarthritis progression following anterior cruciate ligament transection (ACLT) in rats.[1]

Solubility Information

Solubility	DMSO: 60 mg/mL (131.36 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (4.38 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.1893 mL	10.9467 mL	21.8933 mL
5 mM	0.4379 mL	2.1893 mL	4.3787 mL
10 mM	0.2189 mL	1.0947 mL	2.1893 mL
50 mM	0.0438 mL	0.2189 mL	0.4379 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.

Reference

Shi Y, et, al. A small molecule promotes cartilage extracellular matrix generation and inhibits osteoarthritis development. Nat Commun. 2019 Apr 23; 10(1): 1914.