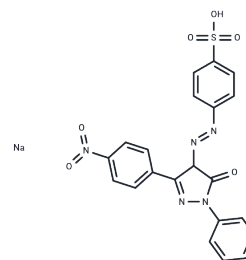


PHPS1 Sodium

Chemical Properties

CAS No. :	1177131-02-0
Formula:	C ₂₁ H ₁₅ N ₅ NaO ₆ S
Molecular Weight:	488.43
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	PHPS1 sodium is a potent and selective inhibitor of Shp2, with Kis of 0.73, 5.8, 10.7, 5.8, and 0.47 μ M for Shp2, Shp2-R362K, Shp1, PTP1B, and PTP1B-Q, respectively [1].
Targets(IC50)	Others,Phosphatase
In vitro	PHPS1, at a concentration of 30 μ M and over a period of 6 days, has been shown to inhibit the proliferation of various human tumor cells. Additionally, when applied at concentrations ranging from 5 to 20 μ M for durations between 5 to 360 minutes, PHPS1 specifically suppresses the phosphorylation of Erk1/2 in a dose-dependent manner, without affecting Akt and Stat3 phosphorylation. In a Cell Viability Assay using human cancer cell lines including MDA-MB-435, HCT-116, HCT-15, PC-3, HT-29, NCI-H661, and Caki-1, a 30 μ M concentration of PHPS1 for 6 days resulted in varying reductions in cell numbers, with no effect (0%) on Caki-1 and up to a 74% reduction in HT-29 cells. Western Blot Analysis on Madin-Darby canine kidney (MDCK) cells treated with 5, 10, and 20 μ M PHPS1 for 5 to 360 minutes indicated that PHPS1 inhibited HGF/SF-induced phosphorylation of Erk1/2 within 15 minutes to 6 hours, though transient phosphorylation of Erk1/2 after 5 minutes remained unaffected. The compound showed no influence on the HGF/SF-induced activation of PI3K/Akt or Stat3.
In vivo	PHPS1 (3 mg/kg; i.p. injection; daily during the last week of the high-fat diet) significantly reduced atherosclerosis (AS) susceptibility in Ldlr -/- mice[2]. Utilizing the Ldlr -/- (005061) mouse model[2] at a dosage of 3 mg/kg administered intraperitoneally (i.p.) daily during the final week of a high-fat diet, a marked decrease in aortic atherosclerotic plaque size was observed compared to control groups.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.0474 mL	10.2369 mL	20.4738 mL
5 mM	0.4095 mL	2.0474 mL	4.0948 mL
10 mM	0.2047 mL	1.0237 mL	2.0474 mL
50 mM	0.0409 mL	0.2047 mL	0.4095 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

Chen J, Cao Z, Guan J. SHP2 inhibitor PHP51 protects against atherosclerosis by inhibiting smooth muscle cell proliferation. *BMC Cardiovasc Disord.* 2018 Apr 27;18(1):72. doi: 10.1186/s12872-018-0816-2. PubMed PMID: 29703160; PubMed Central PMCID: PMC5923012.

Salem IH, Plante S, Gounni AS, Rouabhia M, Chakir J. A shift in the IL-6/STAT3 signalling pathway imbalance towards the SHP2 pathway in severe asthma results in reduced proliferation process. *Cell Signal.* 2018 Mar;43:47-54. doi: 10.1016/j.cellsig.2017.12.001. Epub 2017 Dec 11. PubMed PMID: 29242170.

Zhou W, Yin Y, Weinheimer AS, Kaur N, Carpino N, French JB. Structural and Functional Characterization of the Histidine Phosphatase Domains of Human Sts-1 and Sts-2. *Biochemistry.* 2017 Sep 5;56(35):4637-4645. doi: 10.1021/acs.biochem.7b00638. Epub 2017 Aug 21. PubMed PMID: 28759203; PubMed Central PMCID: PMC5907918.

Qiu Z, Zhou J, Liu F, Qin X, Dai Y, Ke Y, Chen Z, Li W, Ying S, Shen H. Deletion of Shp2 in bronchial epithelial cells impairs IL-25 production in vitro, but has minor influence on asthmatic inflammation in vivo. *PLoS One.* 2017 May 8;12(5):e0177334. doi: 10.1371/journal.pone.0177334. eCollection 2017. PubMed PMID: 28481957; PubMed Central PMCID: PMC5421800.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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