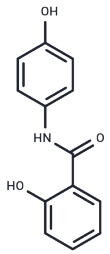
Data Sheet (Cat.No.T0353)

TargetMol

Osalmid

Chemical Properties



CAS No. : 526-18-1

Formula: C13H11NO3

Molecular Weight: 229.23

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	Osalmid (Oxaphenamide) is a choleretic drug, inhibits ribonucleotide reductase activity by targeting ribonucleotide reductase small subunit M2 (RRM2).
Targets(IC50)	DNA/RNA Synthesis,HBV
In vitro	Osalmid has been identified as a potential compound targeting the ribonucleotide reductase small subunit M2 (RRM2), exhibiting a tenfold higher efficacy in inhibiting ribonucleotide reductase (RR) activity than hydroxyurea. It significantly suppresses both HBV DNA and cccDNA synthesis within HepG2.2.15 cells, following a time- and dose-dependent manner. The effective concentration (EC50) for inhibiting HBV DNA is noted as 11.1 μM in culture supernatant and 16.5 μM in cells, following an 8-day treatment with Osalmid, which demonstrates a concentration-dependent suppression of RR activity, marked by an IC50 of 8.23 μM. Moreover, Osalmid has demonstrated potent activity against a 3TC-resistant HBV strain, indicating its potential in treating drug-resistant HBV infections[1].
In vivo	Osalmid diminishes ribonucleotide reductase (RR) activity and hepatitis B virus (HBV) replication in HBV-transgenic mice, demonstrating synergistic effectiveness with lamivudine (3TC) while maintaining a low toxicity profile. Administered orally at a dosage of 400 mg/kg/day, osalmid progressively inhibits HBV DNA replication over time. A four-week treatment regimen results in a 40-45% decrease in HBV DNA replication levels in both the sera and liver tissues of mice, in comparison to untreated controls[1].
Cell Research	HepG2.2.15 cells are cultured in the presence of 200 μg/mL G418. Cell viability is determined using a Cell Counting Kit-8 in 96-well plates treated with Osalmid for designated times. For long term assays, the culture supernatants are replaced with fresh media containing Osalmid every two days. The control wells contained equivalent amounts of DMSO. The CC50 is calculated as the concentration of a compound that reduced the cell viability to 50% compared to the control[1].

Solubility Information

Solubility	DMSO: 247.5 mg/mL (1079.7 mM),Sonication is recommended. Ethanol: 41 mg/mL (178.86 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 (8.72 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	4.3624 mL	21.8122 mL	43.6243 mL
5 mM	0.8725 mL	4.3624 mL	8.7249 mL
10 mM	0.4362 mL	2.1812 mL	4.3624 mL
50 mM	0.0872 mL	0.4362 mL	0.8725 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

Liu X, et al. Inhibition of hepatitis B virus replication by targeting ribonucleotide reductase M2 protein. Biochem Pharmacol. 2016 Mar 1;103:118-28.

Ivanova L, Rausalu K, Žusinaite E, et al. 1,3-Thiazolbenzamide Derivatives as Chikungunya Virus nsP2 Protease Inhibitors. ACS Omega. 2021, 6(8): 5786-5794

Ivanova L, Rausalu K, Žusinaite E, et al. 1, 3-Thiazolbenzamide Derivatives as Chikungunya Virus nsP2 Protease Inhibitors[J]. ACS Omega. 2021

Wang R, Xie S, Zhu S, et al. Targeting matrix metallopeptidase 2 by hydroxyurea selectively kills acute myeloid mixed-lineage leukemia. Cell Death Discovery. 2022, 8(1): 1-10

Ivanova L, Rausalu K, Žusinaite E, et al. 1, 3-Thiazolbenzamide Derivatives as Chikungunya Virus nsP2 Protease Inhibitors. ACS Omega. 2021 Feb 17;6(8):5786-5794. doi: 10.1021/acsomega.0c06191. eCollection 2021 Mar 2.

Jiang J, Shao X, Liu W, et al.The mechano-chemical circuit in fibroblasts and dendritic cells drives basal cell proliferation in psoriasis.Cell Reports.2024, 43(7): 114513.