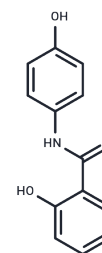


Osalmid

Chemical Properties

| | |
|-------------------|--|
| CAS No. : | 526-18-1 |
| Formula: | C ₁₃ H ₁₁ NO ₃ |
| Molecular Weight: | 229.23 |
| Appearance: | no data available |
| Storage: | Powder: -20°C for 3 years In solvent: -80°C for 1 year |



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 μ M in culture supernatant and 16.5 μ M 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 μ M. 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 μ g/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: 50 mg/mL (218.12 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) |
|------------|--|

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.

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

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