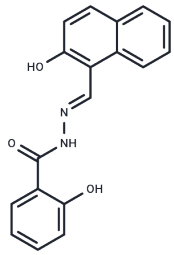
Data Sheet (Cat.No.T8800)

NSAH

Chemical Properties



CAS No. :	1099592-35-4
Formula:	C18H14N2O3
Molecular Weight:	306.32
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	NSAH (2-hydroxy-N'-[(E)-(2-hydroxynaphthalen-1-yl)methylidene]benzohydrazide) is a nonnucleoside inhibitor of human ribonucleotide reductase (hRR).with cell-free IC50 of 32 μM and cell-based IC50 of ~250 nM, respectively.
Targets(IC50)	DNA/RNA Synthesis
In vitro	A unique nonnucleoside small-molecule hRR inhibitor, naphthyl salicylic acyl hydrazone (NSAH), using virtual screening, binding affinity, inhibition, and cell toxicity assays.? NSAH binds to hRRM1 with an apparent dissociation constant of 37 μM, and steady-state kinetics reveal a competitive mode of inhibition.?A 2.66-? resolution crystal structure of NSAH in complex with hRRM1 demonstrates that NSAH functions by binding at the catalytic site (C-site) where it makes both common and unique contacts with the enzyme compared with NDP substrates.?Importantly, the IC for NSAH is within twofold of gemcitabine for growth inhibition of multiple cancer cell lines, while demonstrating little cytotoxicity against normal mobilized peripheral blood progenitor cells.?NSAH depresses dGTP and dATP levels in the dNTP pool causing S-phase arrest, providing evidence for RR inhibition in cells.NSAH (0-10 μM, 2, 6, 24, or 72 h) exhibits potent anti-tumor activity in 3 cancer cell lines[1]

Solubility Information

Solubility	DMSO: 55 mg/mL (179.55 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.2646 mL	16.3228 mL	32.6456 mL
5 mM	0.6529 mL	3.2646 mL	6.5291 mL
10 mM	0.3265 mL	1.6323 mL	3.2646 mL
50 mM	0.0653 mL	0.3265 mL	0.6529 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

Md Faiz Ahmad, et al. Potent competitive inhibition of human ribonucleotide reductase by a nonnucleoside small molecule. Proc Natl Acad Sci U S A. 2017 Aug 1;114(31):8241-8246.

Tessianna A , Misko, Yi-Ting, et al. Structure-guided design of anti-cancer ribonucleotide reductase inhibitors.[J]. Journal of enzyme inhibition and medicinal chemistry, 2019.