

## Topoisomerase I/II inhibitor 2

## Chemical Properties

CAS No. :

Formula: C<sub>19</sub>H<sub>16</sub>N<sub>2</sub>O<sub>4</sub>

Molecular Weight: 336.34

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	Topoisomerase I/II inhibitor 2 (compound 1a) is a DNA topoisomerase I/II dual inhibitor that significantly reduces xenograft tumor growth in a mouse model, indicating its potential use in treating liver cancer. It is a potent topoisomerase inhibitor with IC <sub>50</sub> values of 6.83 $\mu$ M and 9.82 $\mu$ M for LM9 cells and Huh7 cells [1].
Targets(IC <sub>50</sub> )	Others,Topoisomerase
In vitro	Topoisomerase I/II inhibitor 2 (compound 1a) exhibits strong anti-proliferative activity against cancer cell lines, particularly HuH7 and LM9 hepatocellular carcinoma cells, within 0-150 $\mu$ M concentrations over 72 hours. At 20 $\mu$ M for 24 hours, it does not cause DNA damage in HuH7 cells but does in LM9 cells. Its anti-proliferative effect is concentration-dependent, showing significant cell cycle arrest at G <sub>2</sub> /M phase at 0-20 $\mu$ M for 48 hours and inhibiting cell proliferation in both cell lines after 1-2 weeks of treatment with 1.25-8 $\mu$ M. The compound also reduces cell migration and invasion and downregulates MMP-9 expression in a concentration-dependent manner, with notable effects at 0-20 $\mu$ M over 24 to 48 hours. Furthermore, it causes mitochondrial dysfunction and apoptosis at 3.5-20 $\mu$ M over 48 hours. Across various cell lines, including a subset of hepatocellular carcinoma, colorectal, breast, gastric, lung, and leukemia lines, the compound is particularly effective in HuH7 and LM9 cells. Western Blot and cell cycle analyses support its role in inhibiting MMP-9 expression and arresting the cell cycle at the G <sub>2</sub> /M phase, indicating its potential as a targeted therapy for human hepatocellular carcinoma.

### Preparing Stock Solutions

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	<b>1mg</b>	<b>5mg</b>	<b>10mg</b>
1 mM	2.9732 mL	14.8659 mL	29.7318 mL
5 mM	0.5946 mL	2.9732 mL	5.9464 mL
10 mM	0.2973 mL	1.4866 mL	2.9732 mL
50 mM	0.0595 mL	0.2973 mL	0.5946 mL

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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.

**Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins**

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