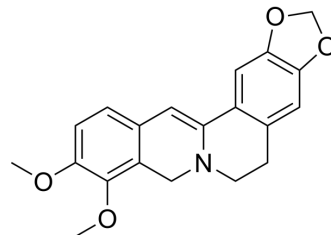


## Dihydroberberine

<b>Cat. No.:</b>	HY-N1934
<b>CAS No.:</b>	483-15-8
<b>Molecular Formula:</b>	C <sub>20</sub> H <sub>19</sub> NO <sub>4</sub>
<b>Molecular Weight:</b>	337.37
<b>Target:</b>	Potassium Channel; HSP
<b>Pathway:</b>	Membrane Transporter/Ion Channel; Cell Cycle/DNA Damage; Metabolic Enzyme/Protease
<b>Storage:</b>	4°C, sealed storage, away from moisture and light * The compound is unstable in solutions, freshly prepared is recommended.



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 20 mg/mL (59.28 mM); ultrasonic and warming and heat to 70°C				
		Solvent Concentration	Mass 1 mg	5 mg	10 mg
	<b>Preparing Stock Solutions</b>	1 mM	2.9641 mL	14.8205 mL	29.6410 mL
		5 mM	0.5928 mL	2.9641 mL	5.9282 mL
10 mM		0.2964 mL	1.4821 mL	2.9641 mL	
Please refer to the solubility information to select the appropriate solvent.					
<b>In Vivo</b>	1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 2 mg/mL (5.93 mM); Clear solution				

### BIOLOGICAL ACTIVITY

<b>Description</b>	Dihydroberberine is a naturally occurring isoquinoline alkaloid with anti-inflammatory, anti-atherosclerotic, hypolipidemic and anti-tumor activities. Dihydroberberine inhibits the human ether-related gene (hERG) channel and significantly reduces the expression of heat shock protein 90 (Hsp90) and its interaction with hERG. Dihydroberberine also blocks the TLR4/MyD88/NF-κB signaling pathway to reduce pro-inflammatory cytokines and immunoglobulins, and has inhibitory effects on DSS (HY-116282C)-induced experimental colitis. Dihydroberberine also increases the sensitivity of lung cancer to sunitinib (HY-10255A), with synergistic efficacy <sup>[1][2]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	HSP90
<b>In Vitro</b>	Dihydroberberine has a synergistic effect with sunitinib, and when mixed together, it exhibits anti-cancer effects in human non-small cell lung cancer cell lines (NSCLC), A549, NCI-H460 and NCI-H1299 cells. Dihydroberberine (25 μM; 48 h) inhibits NCI-H460 cell proliferation and colony formation <sup>[2]</sup> . NCI-H460 cells were treated with a mixture (DCS) of Dihydroberberine (25 μM) and Sunitinib (2 μM) to arrest the cell cycle in

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the G1 phase. DCS regulates JNK/p38 MAPK signaling and plays a role in inducing apoptosis<sup>[2]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**In Vivo**

Dihydroberberine (250 mg/kg; intragastric gavage, once every other day for 14 days) effectively inhibits tumor growth and proliferation in the mouse NCI-H460 xenograft model and exhibits synergistic with Sunitini<sup>[2]</sup>.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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**REFERENCES**

[1]. Yu D, et al. Inhibitory effects and mechanism of dihydroberberine on hERG channels expressed in HEK293 cells. PLoS One. 2017 Aug 1;12(8):e0181823.

[2]. Li C, et al. Dihydroberberine, an isoquinoline alkaloid, exhibits protective effect against dextran sulfate sodium-induced ulcerative colitis in mice. Phytomedicine. 2021 Sep;90:153631.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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