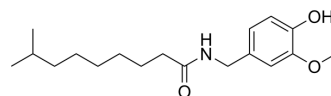


## Dihydrocapsaicin

<b>Cat. No.:</b>	HY-N0361
<b>CAS No.:</b>	19408-84-5
<b>Molecular Formula:</b>	C <sub>18</sub> H <sub>29</sub> NO <sub>3</sub>
<b>Molecular Weight:</b>	307.43
<b>Target:</b>	TRP Channel; Reactive Oxygen Species; Apoptosis; Caspase; Bcl-2 Family; Akt; PI3K
<b>Pathway:</b>	Membrane Transporter/Ion Channel; Neuronal Signaling; Immunology/Inflammation; Metabolic Enzyme/Protease; NF-κB; Apoptosis; PI3K/Akt/mTOR
<b>Storage:</b>	4°C, protect from light * In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 100 mg/mL (325.28 mM; Need ultrasonic)					
		Solvent Concentration	Mass			
	<b>Preparing Stock Solutions</b>			1 mg	5 mg	10 mg
		1 mM		3.2528 mL	16.2639 mL	32.5277 mL
		5 mM		0.6506 mL	3.2528 mL	6.5055 mL
	10 mM		0.3253 mL	1.6264 mL	3.2528 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: ≥ 2.5 mg/mL (8.13 mM); Clear solution					
	2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.5 mg/mL (8.13 mM); Clear solution					
	3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 2.5 mg/mL (8.13 mM); Clear solution					

### BIOLOGICAL ACTIVITY

<b>Description</b>	Dihydrocapsaicin, a capsaicin, is a potent and selective TRPV1 (transient receptor potential vanilloid channel 1) agonist. Dihydrocapsaicin reduces AIF, Bax, and Caspase-3 expressions, and increased Bcl-2, Bcl-xL and p-Akt levels. Dihydrocapsaicin enhances the hypothermia-induced neuroprotection following ischemic stroke via PI3K/Akt regulation in rat <sup>[1][2][3]</sup> .			
<b>IC<sub>50</sub> &amp; Target</b>	TRPV1	PI3K	Caspase 3	Bax
	Bcl-2	Bcl-xL		

<b>In Vitro</b>	<p>Dihydrocapsaicin (0-100 <math>\mu</math>M) inhibits platelet aggregation and the activity of clotting factors VIII:C (6.26-100 <math>\mu</math>M) and IX (25-100 <math>\mu</math>M)<sup>[3]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>									
<b>In Vivo</b>	<p>Dihydrocapsaicin (0.5 mg/kg, IP, once) exhibits hypothermic effect and neuroprotection in rat MCAO models<sup>[2]</sup>. MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td> <td>Sprague-Dawley rats (adult, male, 300-340 g, subjected to right middle cerebral artery occlusion (MCAO))<sup>[2]</sup></td> </tr> <tr> <td>Dosage:</td> <td>0.5 mg/kg</td> </tr> <tr> <td>Administration:</td> <td>IP, once</td> </tr> <tr> <td>Result:</td> <td>Exhibits hypothermic effect, rectal temperature dropped to approximately 35.0 <math>\pm</math> at 30 min, stayed at equal or below 35.0 <math>\pm</math> for approximately 20 min, and then gradually returned to approximately 36.5 <math>\pm</math> at 120 min. Significantly reduced Ischemia-reperfusion induced infarct volume (36.2% <math>\pm</math> 2.5%). Reduces ROS levels at 24 h, and reduced ischemia-reperfusion induced a high level of cell death.</td> </tr> </table>		Animal Model:	Sprague-Dawley rats (adult, male, 300-340 g, subjected to right middle cerebral artery occlusion (MCAO)) <sup>[2]</sup>	Dosage:	0.5 mg/kg	Administration:	IP, once	Result:	Exhibits hypothermic effect, rectal temperature dropped to approximately 35.0 $\pm$ at 30 min, stayed at equal or below 35.0 $\pm$ for approximately 20 min, and then gradually returned to approximately 36.5 $\pm$ at 120 min. Significantly reduced Ischemia-reperfusion induced infarct volume (36.2% $\pm$ 2.5%). Reduces ROS levels at 24 h, and reduced ischemia-reperfusion induced a high level of cell death.
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## CUSTOMER VALIDATION

- Chem Eng J. 2023 Apr 15.

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## REFERENCES

- [1]. Adams MJ, et al. Effect of capsaicin and dihydrocapsaicin on in vitro blood coagulation and platelet aggregation. *Thromb Res.* 2009 Dec;124(6):721-3.
- [2]. Gao F, et al. Impairment in function and expression of transient receptor potential vanilloid type 4 in Dahl salt-sensitive rats: significance and mechanism. *Hypertension.* 2010 Apr;55(4):1018-25.
- [3]. Dihydrocapsaicin, et al. Dihydrocapsaicin (DHC) enhances the hypothermia-induced neuroprotection following ischemic stroke via PI3K/Akt regulation in rat. *Brain Res.* 2017 Sep 15;1671:18-25.

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

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