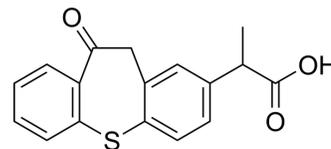


## Zaltoprofen

Cat. No.:	HY-B0619		
CAS No.:	74711-43-6		
Molecular Formula:	C <sub>17</sub> H <sub>14</sub> O <sub>3</sub> S		
Molecular Weight:	298.36		
Target:	COX		
Pathway:	Immunology/Inflammation		
Storage:	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : ≥ 100 mg/mL (335.17 mM)  
 \* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	3.3517 mL	16.7583 mL	33.5166 mL
	5 mM	0.6703 mL	3.3517 mL	6.7033 mL
	10 mM	0.3352 mL	1.6758 mL	3.3517 mL

Please refer to the solubility information to select the appropriate solvent.

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
 Solubility: ≥ 2.5 mg/mL (8.38 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
 Solubility: ≥ 2.5 mg/mL (8.38 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
 Solubility: ≥ 2.5 mg/mL (8.38 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Zaltoprofen (CN100), a non-steroidal anti-inflammatory drug (NSAID), is a preferential and orally active COX-2 inhibitor, with IC<sub>50</sub>s of 1.3 and 0.34 μM for COX-1 and COX-2, respectively. Zaltoprofen exhibits powerful anti-inflammatory effects as well as an analgesic action on inflammatory pain<sup>[1][2][3]</sup>.

#### IC<sub>50</sub> & Target

COX-2	COX-1
0.34 μM (IC <sub>50</sub> )	1.3 μM (IC <sub>50</sub> )

<b>In Vitro</b>	<p>Zaltoprofen (0.1-10 <math>\mu</math>M; 15 min) inhibits thromboxane B2 production in human platelets in a dose-dependent manner<sup>[1]</sup>.  Zaltoprofen (0.01-1 <math>\mu</math>M; 30 min) inhibits prostaglandin E2 production by interleukin-1<math>\beta</math>-stimulated synovial cells<sup>[1]</sup>.  Zaltoprofen (0.1-1 <math>\mu</math>M; 5 min) inhibits the bradykinin-induced increase of <math>[Ca^{2+}]_i</math> in DRG cells<sup>[2]</sup>.  MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>								
<b>In Vivo</b>	<p>Zaltoprofen (5-20 mg/kg; a single p.o.) inhibits bradykinin-induced nociceptive responses in rats<sup>[2]</sup>.  Zaltoprofen (3-30 mg/kg; a single p.o.) inhibits the acetic acid-induced writhing response of mice in a dose-dependent manner<sup>[2]</sup>.  MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1" data-bbox="345 447 1515 720"> <tr> <td data-bbox="345 447 618 516">Animal Model:</td> <td data-bbox="618 447 1515 516">Eight-week-old male Wistar rats were injected Bradykinin every 15 min<sup>[2]</sup></td> </tr> <tr> <td data-bbox="345 516 618 569">Dosage:</td> <td data-bbox="618 516 1515 569">5, 10, 20 mg/kg</td> </tr> <tr> <td data-bbox="345 569 618 621">Administration:</td> <td data-bbox="618 569 1515 621">A single p.o.</td> </tr> <tr> <td data-bbox="345 621 618 720">Result:</td> <td data-bbox="618 621 1515 720">Inhibited bradykinin-induced nociceptive responses, with an ED50 of 9.7 mg/kg. The duration of analgesic effect was 60-90 min.</td> </tr> </table>	Animal Model:	Eight-week-old male Wistar rats were injected Bradykinin every 15 min <sup>[2]</sup>	Dosage:	5, 10, 20 mg/kg	Administration:	A single p.o.	Result:	Inhibited bradykinin-induced nociceptive responses, with an ED50 of 9.7 mg/kg. The duration of analgesic effect was 60-90 min.
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Administration:	A single p.o.								
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## REFERENCES

- [1]. Kawai S, et, al. Comparison of cyclooxygenase-1 and -2 inhibitory activities of various nonsteroidal anti-inflammatory drugs using human platelets and synovial cells. *Eur J Pharmacol.* 1998 Apr 17;347(1):87-94.
- [2]. Hirate K, et, al. Zaltoprofen, a non-steroidal anti-inflammatory drug, inhibits bradykinin-induced pain responses without blocking bradykinin receptors. *Neurosci Res.* 2006 Apr;54(4):288-94.
- [3]. Kameyama T, et, al. Analgesic and antiinflammatory effects of 2-(10,11-dihydro-10-oxo-dibenzo[b,f]thiepin-2-yl)propionic acid in rat and mouse. *Arzneimittelforschung.* 1987 Jan;37(1):19-26.

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

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