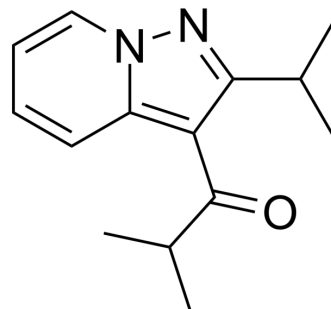


## Ibudilast

<b>Cat. No.:</b>	HY-B0763		
<b>CAS No.:</b>	50847-11-5		
<b>Molecular Formula:</b>	C <sub>14</sub> H <sub>18</sub> N <sub>2</sub> O		
<b>Molecular Weight:</b>	230.31		
<b>Target:</b>	Phosphodiesterase (PDE)		
<b>Pathway:</b>	Metabolic Enzyme/Protease		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO :  $\geq 140$  mg/mL (607.88 mM)  
 H<sub>2</sub>O :  $< 0.1$  mg/mL (ultrasonic;warming;heat to 60°C) (insoluble)  
 \* " $\geq$ " means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	4.3420 mL	21.7099 mL	43.4197 mL
	5 mM	0.8684 mL	4.3420 mL	8.6839 mL
	10 mM	0.4342 mL	2.1710 mL	4.3420 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:  $\geq 2.67$  mg/mL (11.59 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE- $\beta$ -CD in saline)  
Solubility:  $\geq 2.67$  mg/mL (11.59 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility:  $\geq 2.67$  mg/mL (11.59 mM); Clear solution
- Add each solvent one by one: 5% DMSO >> 40% PEG300 >> 5% Tween-80 >> 50% saline  
Solubility:  $\geq 2.5$  mg/mL (10.85 mM); Clear solution
- Add each solvent one by one: 5% DMSO >> 95% (20% SBE- $\beta$ -CD in saline)  
Solubility:  $\geq 2.5$  mg/mL (10.85 mM); Clear solution
- Add each solvent one by one: 1% DMSO >> 99% saline  
Solubility: 0.5 mg/mL (2.17 mM); Suspended solution; Need ultrasonic

### BIOLOGICAL ACTIVITY

<b>Description</b>	Ibudilast (KC-404; AV-411; MN-166) is a cyclic AMP phosphodiesterase (PDE) inhibitor. Ibudilast has platelet anti-aggregatory effects. Ibudilast can be used for the research of asthma for its inhibitory effects on tracheal smooth muscle contractility. Ibudilast may be a useful neuroprotective and anti-dementia agent counteracting neurotoxicity in activated microglia <sup>[1]</sup> .								
<b>IC<sub>50</sub> &amp; Target</b>	phosphodiesterase <sup>[1]</sup>								
<b>In Vitro</b>	<p>Ibudilast (1~100 μM; 24 hours; microglia) suppresses both IL-1β and IL-6 production at 100 μM, and significantly suppresses TNF-α production at 10 and 100 μM<sup>[1]</sup>.</p> <p>Ibudilast (1~100 μM; 48 hours; neuronal cells) significantly increases the neuronal survival rate. Ibudilast (1~100 μM; 48 hours; microglia) inhibits the production of superoxide and NO<sup>[1]</sup>.</p> <p>Ibudilast upregulates the production of IL-10 in a dose-dependent manner. Ibudilast increases NGF mRNA and protein levels and GDNF and NT-4 mRNA expression. Ibudilast decreases the apoptotic changes observed in the neuronal cells in a dose-dependent manner<sup>[1]</sup>.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <p>Western Blot Analysis<sup>[1]</sup></p> <table border="1"> <tr> <td>Cell Line:</td> <td>Microglia</td> </tr> <tr> <td>Concentration:</td> <td>1~100 μM</td> </tr> <tr> <td>Incubation Time:</td> <td>24 hours</td> </tr> <tr> <td>Result:</td> <td>Suppressed both IL-1β and IL-6 production at 100 μM, and significantly suppresses TNF-α production at 10 and 100 μM.</td> </tr> </table>	Cell Line:	Microglia	Concentration:	1~100 μM	Incubation Time:	24 hours	Result:	Suppressed both IL-1β and IL-6 production at 100 μM, and significantly suppresses TNF-α production at 10 and 100 μM.
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## CUSTOMER VALIDATION

- Photochem Photobiol. 2016 Nov;92(6):816-825.
- bioRxiv. 2021 Apr 8.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## REFERENCES

[1]. Mizuno T, et al. Neuroprotective role of phosphodiesterase inhibitor ibudilast on neuronal cell death induced by activated microglia. Neuropharmacology. 2004 Mar;46(3):404-11.

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

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