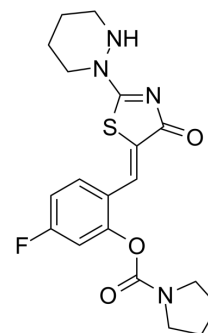


## CLP290

<b>Cat. No.:</b>	HY-103023		
<b>CAS No.:</b>	1181083-81-7		
<b>Molecular Formula:</b>	C <sub>19</sub> H <sub>21</sub> FN <sub>4</sub> O <sub>3</sub> S		
<b>Molecular Weight:</b>	404.46		
<b>Target:</b>	Potassium Channel		
<b>Pathway:</b>	Membrane Transporter/Ion Channel		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	2 years
		-20°C	1 year



## SOLVENT & SOLUBILITY

### In Vitro

DMSO : 33.33 mg/mL (82.41 mM; Need ultrasonic)

Concentration	Solvent	Mass	1 mg	5 mg	10 mg
			1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		2.4724 mL	12.3622 mL	24.7243 mL
	5 mM		0.4945 mL	2.4724 mL	4.9449 mL
	10 mM		0.2472 mL	1.2362 mL	2.4724 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: ≥ 2.08 mg/mL (5.14 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.08 mg/mL (5.14 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.08 mg/mL (5.14 mM); Clear solution

## BIOLOGICAL ACTIVITY

### Description

CLP290 is an orally available activator of the neuron-specific K<sup>+</sup>-Cl<sup>-</sup> cotransporter KCC2, displays potential for treatment of a wide range of neurological and psychiatric indications. CLP290 can significantly lower blood arginine-vasopressin (AVP) and glucose levels in STZ rats<sup>[1][2]</sup>.

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

KCC2<sup>[1]</sup>

### In Vivo

CLP290 (oral gavage; 100 mg/kg; twice a day; 7 day) enhances KCC2 activity and restores Cl<sup>-</sup> transport in superficial dorsal

horn (SDH) neurons of morphine-treated rats, and prevents morphine-induced hyperalgesia (MIH) in rat<sup>[1]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Adult male rats (300 g, >postnatal day 60) <sup>[1]</sup>
Dosage:	100 mg/kg
Administration:	Oral gavage; 100 mg/kg; twice a day; 7day
Result:	Rescued established MIH and prevented its development by restoring Cl <sup>-</sup> transport or preventing its deficiency in the SDH.

## CUSTOMER VALIDATION

- Exp Neurol. 2022 Mar 1;114027.

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

## REFERENCES

[1]. Ferrini F, et al. Enhancing KCC2 function counteracts morphine-induced hyperalgesia. Sci Rep. 2017 Jun 20;7(1):3870.

[2]. Gagnon M, et al. Chloride extrusion enhancers as novel therapeutics for neurological diseases. Nat Med. 2013 Nov;19(11):1524-8.

[3]. Kim YB, et al. Excitatory GABAergic Action and Increased Vasopressin Synthesis in Hypothalamic Magnocellular Neurosecretory Cells Underlie the High Plasma Level of Vasopressin in Diabetic Rats. Diabetes. 2018 Mar;67(3):486-495.

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

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