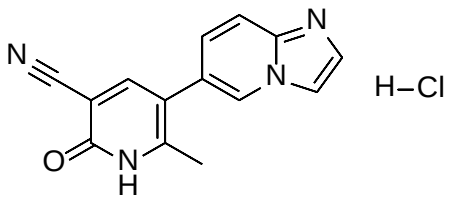
Product data sheet

MedKoo Cat#: 326772 Name: Olprinone HCl CAS: 119615-63-3 (HCl) Chemical Formula: $C_{14}H_{11}ClN_4O$ Molecular Weight: 286.719	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:

Olprinone (INN) is a cardiotonic agent and a specific phosphodiesterase (PDE)-III inhibitor. It has been marketed in Japan since 1996. Olprinone attenuates excessive shear stress through up-regulation of endothelial nitric oxide synthase in a rat excessive hepatectomy model. Olprinone reduces the development of multiple organ dysfunction syndrome in mice.

2. CoA, QC data, SDS, and handling instruction

SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
Water	7.69	26.82

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.49 mL	17.44 mL	34.88 mL
5 mM	0.70 mL	3.49 mL	6.98 mL
10 mM	0.35 mL	1.74 mL	3.49 mL
50 mM	0.07 mL	0.35 mL	0.70 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator

Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study

In vitro study

1. Endo R, Kurata Y, Notsu T, Li P, Morikawa K, Kondo T, Ogura K, Miake J, Yoshida A, Shirayoshi Y, Ninomiya H, Higaki K, Kuwabara M, Yamamoto K, Inagaki Y, Hisatome I. Stabilization of Kv1.5 channel protein by the inotropic agent olprinone. Eur J Pharmacol. 2015 Oct 15;765:488-94. doi: 10.1016/j.ejphar.2015.09.013. Epub 2015 Sep 12. PMID: 26368666.
2. Okayama N, Matsunaga A, Kakihana Y, Fujikawa K, Inoue K, Nagayama T, Takeyama M, Miyata A, Kanmura Y. The effects of the phosphodiesterase inhibitor olprinone on global cerebral ischemia. Anesth Analg. 2010 Mar 1;110(3):888-94. doi: 10.1213/ANE.0b013e3181cb5cdd. Epub 2009 Dec 30. PMID: 20042441.

In vivo study

1. Kosutova P, Mikolka P, Balentova S, Adamkov M, Calkovska A, Mokra D. Effects of PDE3 Inhibitor Olprinone on the Respiratory Parameters, Inflammation, and Apoptosis in an Experimental Model of Acute Respiratory Distress Syndrome. Int J Mol Sci. 2020 May 11;21(9):3382. doi: 10.3390/ijms21093382. PMID: 32403267; PMCID: PMC7247002.
2. Han MX, Xu XW, Lu SQ, Zhang GX. Effect of olprinone on ischemia-reperfusion induced myocardial injury in rats. Biomed Pharmacother. 2019 Mar;111:1005-1012. doi: 10.1016/j.biopha.2019.01.010. Epub 2019 Jan 10. PMID: 30841413.

7. Bioactivity

Biological target:

Olprinone (INN) is a cardiotonic agent and a specific phosphodiesterase (PDE)-III inhibitor.

Product data sheet

In vitro activity

Olprinone at 30-1000 nM increased the protein level of Kv1.5 channels in a concentration-dependent manner. Chase experiments showed that olprinone delayed degradation of Kv1.5 channels. Olprinone increased the immunofluorescent signal of Kv1.5 channels in the endoplasmic reticulum (ER) and Golgi apparatus as well as on the cell surface. Kv1.5-mediated membrane currents, measured as 4-aminopyridine-sensitive currents, were increased by olprinone without changes in their activation kinetics.

Reference: Eur J Pharmacol. 2015 Oct 15;765:488-94. https://pubmed.ncbi.nlm.nih.gov/26368666/

In vivo activity

This study aimed to investigate whether a selective phosphodiesterase-3 (PDE3) inhibitor olprinone can positively influence the inflammation, apoptosis, and respiratory parameters in animals with acute respiratory distress syndrome (ARDS) model induced by repetitive saline lung lavage. Adult rabbits were divided into 3 groups: ARDS without therapy (ARDS), ARDS treated with olprinone i.v. (1 mg/kg; ARDS/PDE3), and healthy ventilated controls (Control), and were oxygen-ventilated for the following 4 h. Treatment with olprinone reduced the release of inflammatory mediators and markers of oxidative damage decreased apoptosis of epithelial cells and improved respiratory parameters.

Reference: Int J Mol Sci. 2020 May 11;21(9):3382. https://pubmed.ncbi.nlm.nih.gov/32403267/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.