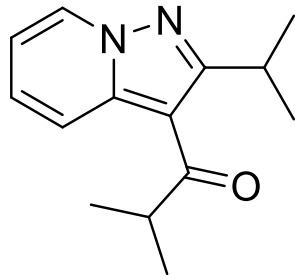


# Product data sheet



MedKoo Cat#: 319626 Name: Ibudilast CAS: 50847-11-5 Chemical Formula: C <sub>14</sub> H <sub>18</sub> N <sub>2</sub> O Exact Mass: 230.1419 Molecular Weight: 230.311		
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:

Ibudilast, also known as AV-411, KC-404 and MN-166, is an antiinflammatory drug used mainly in Japan, which acts as a phosphodiesterase inhibitor, inhibiting the PDE-4 subtype to the greatest extent, but also showing significant inhibition of other PDE subtypes. Ibudilast has bronchodilator, vasodilator and neuroprotective effects, and is mainly used in the treatment of asthma and stroke. It inhibits platelet aggregation, and may also be useful in the treatment of multiple sclerosis.

## 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
DMF	20.0	86.84
DMSO	56.26	244.27
Ethanol	31.34	136.09
Ethanol:PBS (pH 7.2) (1:11)	0.08	0.35
Water	30.0	130.26

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.34 mL	21.71 mL	43.42 mL
5 mM	0.87 mL	4.34 mL	8.68 mL
10 mM	0.43 mL	2.17 mL	4.34 mL
50 mM	0.09 mL	0.43 mL	0.87 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. Ishibashi J, Saito K, Ishizaki T, Horie I, Isohama Y. Ibudilast Suppresses MUC5AC Mucus Production through Inhibition of ERK1/2 Phosphorylation. *Biol Pharm Bull.* 2021;44(3):404-409. doi: 10.1248/bpb.b20-00798. PMID: 33642548.
2. Chang Y, Hu CC, Wu YY, Ueng SWN, Chang CH, Chen MF. Ibudilast Mitigates Delayed Bone Healing Caused by Lipopolysaccharide by Altering Osteoblast and Osteoclast Activity. *Int J Mol Sci.* 2021 Jan 25;22(3):1169. doi: 10.3390/ijms22031169. PMID: 33503906; PMCID: PMC7865869.

### In vivo study

1. Kadota N, Yoshida A, Sawamoto A, Okuyama S, Nakajima M. Ibudilast Reduces IL-6 Levels and Ameliorates Symptoms in Lipopolysaccharide-Induced Sepsis Mice. *Biol Pharm Bull.* 2022;45(8):1180-1184. doi: 10.1248/bpb.b22-00284. PMID: 35908899.

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2. Egashira N, Goto Y, Takahashi R, Iba H, Yamamoto S, Watanabe T, Kubota K, Kawashiri T, Taniguchi C, Katsurabayashi S, Iwasaki K. Ibudilast suppresses oxaliplatin-induced mechanical allodynia and neurodegeneration in rats. J Pharmacol Sci. 2021 Sep;147(1):114-117. doi: 10.1016/j.jphs.2021.06.004. Epub 2021 Jun 12. PMID: 34294361.

## 7. Bioactivity

### Biological target:

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Ibudilast (KC-404; AV-411; MN-166) is a cyclic AMP phosphodiesterase (PDE) inhibitor. Ibudilast has platelet anti-aggregatory effects.

### In vitro activity

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Ibudilast suppressed the increase in MUC5AC released from the cells treated with any concentration of TGF- $\alpha$ ; this effect was observed even at the highest concentration (100 ng/mL) (Fig. 1B).

Reference: Biol Pharm Bull. 2021;44(3):404-409. <https://pubmed.ncbi.nlm.nih.gov/33642548/>

### In vivo activity

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This study observed that IBD (ibudilast) ameliorated this reduction in temperature (Fig. 1A). Administration of LPS upregulated IL-6 levels, whereas IBD reduced the upregulated IL-6 levels (Fig. 1B).

Reference: Biol Pharm Bull. 2022;45(8):1180-1184. <https://pubmed.ncbi.nlm.nih.gov/35908899/>

*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.*