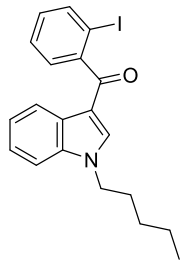
Product data sheet

MedKoo Cat#: 573765 Name: AM-679 CAS#: 335160-91-3 Chemical Formula: $C_{20}H_{20}INO$ Exact Mass: 417.059 Molecular Weight: 417.29	
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:
AM-679 is a 5-lipoxygenase-activating protein (FLAP) inhibitor.

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
DMSO	57.0	136.60
DMF	10.0	23.96
Ethanol	10.0	23.96

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.40 mL	11.98 mL	23.96 mL
5 mM	0.48 mL	2.40 mL	4.79 mL
10 mM	0.24 mL	1.20 mL	2.40 mL
50 mM	0.05 mL	0.24 mL	0.48 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. Stock N, Baccei C, Bain G, Broadhead A, Chapman C, Darlington J, King C, Lee C, Li Y, Lorrain DS, Prodanovich P, Rong H, Santini A, Zunic J, Evans JF, Hutchinson JH, Prasit P. 5-Lipoxygenase-activating protein inhibitors. Part 2: 3-{5-((S)-1-Acetyl-2,3-dihydro-1H-indol-2-ylmethoxy)-3-tert-butylsulfanyl-1-[4-(5-methoxy-pyrimidin-2-yl)-benzyl]-1H-indol-2-yl}-2,2-dimethyl-propionic acid (AM679)--a potent FLAP inhibitor. Bioorg Med Chem Lett. 2010 Jan 1;20(1):213-7. doi: 10.1016/j.bmcl.2009.10.131. Epub 2009 Oct 31. PMID: 19914828.

In vivo study

1. Stock N, Baccei C, Bain G, Broadhead A, Chapman C, Darlington J, King C, Lee C, Li Y, Lorrain DS, Prodanovich P, Rong H, Santini A, Zunic J, Evans JF, Hutchinson JH, Prasit P. 5-Lipoxygenase-activating protein inhibitors. Part 2: 3-{5-((S)-1-Acetyl-2,3-dihydro-1H-indol-2-ylmethoxy)-3-tert-butylsulfanyl-1-[4-(5-methoxy-pyrimidin-2-yl)-benzyl]-1H-indol-2-yl}-2,2-dimethyl-propionic acid (AM679)--a potent FLAP inhibitor. Bioorg Med Chem Lett. 2010 Jan 1;20(1):213-7. doi: 10.1016/j.bmcl.2009.10.131. Epub 2009 Oct 31. PMID: 19914828.
2. Musiyenko A, Correa L, Stock N, Hutchinson JH, Lorrain DS, Bain G, Evans JF, Barik S. A novel 5-lipoxygenase-activating protein inhibitor, AM679, reduces inflammation in the respiratory syncytial virus-infected mouse eye. Clin Vaccine Immunol. 2009 Nov;16(11):1654-9. doi: 10.1128/CVI.00220-09. Epub 2009 Sep 16. PMID: 19759251; PMCID: PMC2772391.

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7. Bioactivity

Biological target:

AM679 is a potent, selective 5-lipoxygenase-activating protein (FLAP) inhibitor with an IC50 of 2 nM in a human FLAP membrane binding assay.

In vitro activity

ll of the biaryl compounds 34 to 39 (AM679) showed excellent in vitro inhibition against FLAP. Of particular note was compound 39 with an excellent hWB IC_{50} potency of 154 nM. This compound also showed an improved CYP inhibition profile (IC_{50} 3A4 = 16.7 μM, 2C9 = 3.7 μM, 2D6 >30 μM), no time dependent inhibition against CYP3A4 (0.003 min^{-1} vs 0.057 min^{-1} for troleandomycin control @ 10 μM) and no CYP3A4 induction. The pharmacokinetic properties of 39 had also significantly improved over the chlorobenzyl derivative 20, showing reasonable bioavailability, low clearance and improved AUC (10 mg/kg sodium carboxylate salt in rat po F = 29%, Cl = 11 mL/min/kg, C_{max} = 1.6 μM, AUC = 4.6 h μg/mL, $T_{½}$ = 6.8 h).

Reference: Bioorg Med Chem Lett. 2010 Jan 1;20(1):213-7. https://pubmed.ncbi.nlm.nih.gov/19914828/

In vivo activity

To determine if a FLAP LT synthesis inhibitor can ameliorate eye inflammation following RSV infection, this study treated one eye of drug-treated mice with 60 ng AM679 in 2 μl sterile saline (or one eye of control mice with 2 μl sterile saline only) 40 min after inoculation with 106 PFU RSV and then every day afterward for 13 more days. The RSV-infected eyes from control mice showed ocular inflammation, mucus, and conjunctivitis that peaked 6 to 8 days after infection and largely resolved by 14 days (Fig. 3). The FLAP inhibitor AM679-treated mouse eyes showed significant protection from RSV-induced pathology as early as 2 days continuing to 14 days postinfection. At 6 to 8 days the FLAP inhibitor-treated eyes showed greater then 70% reduction in total pathological scores. Representative eyes from both control and AM679-treated mice through days 2 to 6 clearly demonstrate the reduced inflammation and mucus in the drug-treated animals (Fig. 3).

Reference: Clin Vaccine Immunol. 2009 Nov; 16(11): 1654–1659. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2772391/

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.