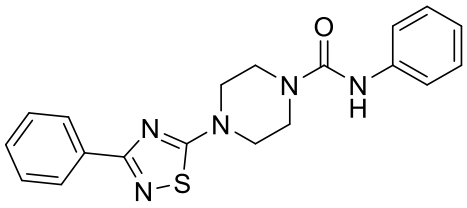
Product data sheet

MedKoo Cat#: 525305 Name: JNJ-1661010 CAS: 681136-29-8 Chemical Formula: $C_{19}H_{19}N_5OS$ Exact Mass: 365.1310 Molecular Weight: 365.455	
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:
JNJ-1661010 is a selective, reversible inhibitor of fatty acid amide hydrolase (FAAH) (IC50 = 12 nM). JNJ-1661010 is a brain penetrant and active in vivo.

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	25.0	68.41
DMF:PBS (pH 7.2) (1:5)	0.16	0.44
DMSO	48.14	131.72
Ethanol	2.58	7.05

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	**1 mg**	**5 mg**	**10 mg**
1 mM	2.74 mL	13.68 mL	27.36 mL
5 mM	0.55 mL	2.74 mL	5.47 mL
10 mM	0.27 mL	1.37 mL	2.74 mL
50 mM	0.06 mL	0.27 mL	0.55 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. Lowin T, Apitz M, Anders S, Straub RH. Anti-inflammatory effects of N-acylethanolamines in rheumatoid arthritis synovial cells are mediated by TRPV1 and TRPA1 in a COX-2 dependent manner. Arthritis Res Ther. 2015 Nov 14;17:321. doi: 10.1186/s13075-015-0845-5. PMID: 26567045; PMCID: PMC4644337.
2. Karbarz MJ, Luo L, Chang L, Tham CS, Palmer JA, Wilson SJ, Wennerholm ML, Brown SM, Scott BP, Apodaca RL, Keith JM, Wu J, Breitenbucher JG, Chaplan SR, Webb M. Biochemical and biological properties of 4-(3-phenyl-[1,2,4] thiadiazol-5-yl)-piperazine-1-carboxylic acid phenylamide, a mechanism-based inhibitor of fatty acid amide hydrolase. Anesth Analg. 2009 Jan;108(1):316-29. doi: 10.1213/ane.0b013e31818c7cbd. PMID: 19095868.

In vivo study

1. Lowin T, Apitz M, Anders S, Straub RH. Anti-inflammatory effects of N-acylethanolamines in rheumatoid arthritis synovial cells are mediated by TRPV1 and TRPA1 in a COX-2 dependent manner. Arthritis Res Ther. 2015 Nov 14;17:321. doi: 10.1186/s13075-015-0845-5. PMID: 26567045; PMCID: PMC4644337.

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2. Karbarz MJ, Luo L, Chang L, Tham CS, Palmer JA, Wilson SJ, Wennerholm ML, Brown SM, Scott BP, Apodaca RL, Keith JM, Wu J, Breitenbucher JG, Chaplan SR, Webb M. Biochemical and biological properties of 4-(3-phenyl-[1,2,4] thiadiazol-5-yl)-piperazine-1-carboxylic acid phenylamide, a mechanism-based inhibitor of fatty acid amide hydrolase. Anesth Analg. 2009 Jan;108(1):316-29. doi: 10.1213/ane.0b013e31818c7cbd. PMID: 19095868.

7. Bioactivity

Biological target:

JNJ-1661010 (Takeda-25) a potent and selective fatty acid amide hydrolase (FAAH) inhibitor with IC_{50}s of 34 and 33 nM for rat FAAH and human FAAH, respectively.

In vitro activity

Under these conditions, AEA (at 10^{-6} M and 10^{-8} M) and concomitant FAAH inhibition with JNJ1661010 (1 μM) reduced the production of IL-6 and IL-8 by RA but not OA mixed synoviocytes (Fig. 1b, d).

Reference: Arthritis Res Ther. 2015 Nov 14;17:321. https://pubmed.ncbi.nlm.nih.gov/26567045/

In vivo activity

JNJ-1661010 dose-dependently increases arachidonoyl ethanolamide, oleoyl ethanolamide, and palmitoyl ethanolamide in the rat brain. The compound attenuates tactile allodynia in the rat mild thermal injury model of acute tissue damage and in the rat spinal nerve ligation (Chung) model of neuropathic pain. JNJ-1661010 also diminishes thermal hyperalgesia in the inflammatory rat carrageenan paw model. These data suggest that FAAH inhibitors with modes of action similar to JNJ-1661010 may be useful clinically as broad-spectrum analgesics.

Reference: Anesth Analg. 2009 Jan;108(1):316-29. https://pubmed.ncbi.nlm.nih.gov/19095868/