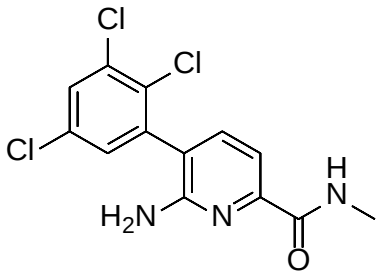
Product data sheet

MedKoo Cat#: 532458 Name: PF-01247324 CAS: 875051-72-2 Chemical Formula: $C_{13}H_{10}Cl_3N_3O$ Exact Mass: 328.9889 Molecular Weight: 330.593	
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:
PF-01247324 is a novel selective and orally bioavailable Nav 1.8 channel blocker, attenuates nociception and sensory neuron excitability.

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	30.0	90.75
DMSO	30.0	90.75
Ethanol	30.0	90.75
Ethanol:PBS (pH 7.2) (1:4)	0.2	0.60

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.02 mL	15.12 mL	30.25 mL
5 mM	0.61 mL	3.02 mL	6.05 mL
10 mM	0.30 mL	1.51 mL	3.02 mL
50 mM	0.06 mL	0.30 mL	0.61 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. Payne CE, Brown AR, Theile JW, Loucif AJ, Alexandrou AJ, Fuller MD, Mahoney JH, Antonio BM, Gerlach AC, Printzenhoff DM, Prime RL, Stockbridge G, Kirkup AJ, Bannon AW, England S, Chapman ML, Bagal S, Roeloffs R, Anand U, Anand P, Bungay PJ, Kemp M, Butt RP, Stevens EB. A novel selective and orally bioavailable Nav 1.8 channel blocker, PF-01247324, attenuates nociception and sensory neuron excitability. Br J Pharmacol. 2015 May;172(10):2654-70. doi: 10.1111/bph.13092. Epub 2015 Apr 10. PMID: 25625641; PMCID: PMC4409913.

In vivo study

1. Shields SD, Butt RP, Dib-Hajj SD, Waxman SG. Oral administration of PF-01247324, a subtype-selective Nav1.8 blocker, reverses cerebellar deficits in a mouse model of multiple sclerosis. PLoS One. 2015 Mar 6;10(3):e0119067. doi: 10.1371/journal.pone.0119067. PMID: 25747279; PMCID: PMC4352054.

7. Bioactivity
Biological target:

Product data sheet

PF-01247324 is a selective and orally bioavailable Nav1.8 channel blocker with an IC50 of 196 nM for recombinant human Nav1.8 channel.

In vitro activity

The inhibition of Nav 1.8 channels by PF-01247324 was studied using in vitro patch-clamp electrophysiology and the oral bioavailability and antinociceptive effects demonstrated using in vivo rodent models of inflammatory and neuropathic pain. PF-01247324 inhibited native tetrodotoxin-resistant (TTX-R) currents in human dorsal root ganglion (DRG) neurons (IC50 : 331 nM) and in recombinantly expressed h Nav 1.8 channels (IC50 : 196 nM), with 50-fold selectivity over recombinantly expressed TTX-R hNav 1.5 channels (IC50 : ~10 μM) and 65-100-fold selectivity over TTX-sensitive (TTX-S) channels (IC50 : ~10-18 μM). Native TTX-R currents in small-diameter rodent DRG neurons were inhibited with an IC50 448 nM, and the block of both human recombinant Nav 1.8 channels and TTX-R from rat DRG neurons was both frequency and state dependent. In vitro current clamp showed that PF-01247324 reduced excitability in both rat and human DRG neurons and also altered the waveform of the action potential.

Reference: Br J Pharmacol. 2015 May;172(10):2654-70. https://pubmed.ncbi.nlm.nih.gov/25625641/

In vivo activity

The present study assessed the effect of per os (p.o.) dosing of a new orally bioavailable Nav1.8-selective blocker, PF-01247324, in transgenic mice expressing Nav1.8 in Purkinje neurons, and in wildtype mice in the experimental autoimmune encephalomyelitis (EAE) model. PF-01247324 was administered by oral gavage at 1000 mg/kg; control groups received an equal volume of vehicle. Behavioral assays of motor coordination, grip strength, and ataxia were performed. This study observed significant improvements in motor coordination and cerebellar-like symptoms in mice that received PF-01247324 compared to control littermates that received vehicle.

Reference: PLoS One. 2015 Mar 6;10(3):e0119067. https://pubmed.ncbi.nlm.nih.gov/25747279/