

Product data sheet



MedKoo Cat#: 562916 Name: Prucalopride CAS#: 179474-81-8 (free base) Chemical Formula: C ₁₈ H ₂₆ ClN ₃ O ₃ Exact Mass: 367.1663 Molecular Weight: 367.87		
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:

Prucalopride is a 5-HT₄R agonist.

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	54.37
DMSO	10	27.18
Ethanol	10	27.18

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.72 mL	13.59 mL	27.18 mL
5 mM	0.54 mL	2.72 mL	5.44 mL
10 mM	0.27 mL	1.36 mL	2.72 mL
50 mM	0.05 mL	0.27 mL	0.54 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

- Chen M, Zhu LL, Su JL, Li GL, Wang J, Zhang YN. Prucalopride inhibits lung cancer cell proliferation, invasion, and migration through blocking of the PI3K/AKT/mTor signaling pathway. *Hum Exp Toxicol*. 2020 Feb;39(2):173-181. doi: 10.1177/0960327119883409. Epub 2019 Oct 22. PMID: 31640407.
- Bianco F, Bonora E, Natarajan D, Vargiolu M, Thapar N, Torresan F, Giancola F, Boschetti E, Volta U, Bazzoli F, Mazzoni M, Seri M, Clavenzani P, Stanghellini V, Sternini C, De Giorgio R. Prucalopride exerts neuroprotection in human enteric neurons. *Am J Physiol Gastrointest Liver Physiol*. 2016 May 15;310(10):G768-75. doi: 10.1152/ajpgi.00036.2016. Epub 2016 Feb 18. PMID: 26893157; PMCID: PMC5243219.

In vivo study

- Wang Y, Xu X, Lin L. Prucalopride might improve intestinal motility by promoting the regeneration of the enteric nervous system in diabetic rats. *Int J Mol Med*. 2022 Jul;50(1):87. doi: 10.3892/ijmm.2022.5143. Epub 2022 May 11. PMID: 35543167; PMCID: PMC9162040.
- Shi Y, Qiao CM, Zhou Y, Wu J, Cui C, Hong H, Jia XB, Huang SB, Yao L, Zhao WJ, Shen YQ. Protective effects of prucalopride in MPTP-induced Parkinson's disease mice: Neurochemistry, motor function and gut barrier. *Biochem Biophys Res Commun*. 2021 Jun 4;556:16-22. doi: 10.1016/j.bbrc.2021.03.109. Epub 2021 Apr 6. PMID: 33836343.

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7. Bioactivity

Biological target:

Prucalopride is a 5-HT₄ receptor agonist with pK_is of 8.6 and 8.1 for human 5-HT_{4a}/4b receptors, respectively.

In vitro activity

Prucalopride exhibited inhibitory effects on cell proliferation, invasion, and migration in A549 and A427 lung cancer cells. Prucalopride induced autophagy and apoptosis while downregulating the phosphorylation of protein kinase B (AKT) and mammalian target of rapamycin in the PI3K/AKT/mTor signaling pathway.

Reference: Hum Exp Toxicol. 2020 Feb;39(2):173-181. <https://pubmed.ncbi.nlm.nih.gov/31640407/>

In vivo activity

Prucalopride was administered to diabetic rats, and its effects on intestinal motility and the regeneration of the enteric nervous system (ENS) were examined. The diabetic rats exhibited prolonged colonic transit time, which was significantly shortened by prucalopride treatment. In prucalopride-treated groups, there was increased expression of Nestin, GFAP, SOX10, RNA- HuD, and PGP9.5. Prucalopride also led to increased 5-HT levels. These findings suggest that prucalopride improves intestinal motility by promoting ENS regeneration in rats with DM.

Reference: Int J Mol Med. 2022 Jul;50(1):87. <https://pubmed.ncbi.nlm.nih.gov/35543167/>

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.