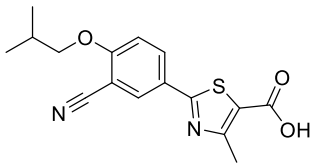
Product data sheet

MedKoo Cat#: 328907 Name: Febuxostat CAS#: 144060-53-7 Chemical Formula: $C_{16}H_{16}N_2O_3S$ Exact Mass: 316.0882 Molecular Weight: 316.375	
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:
Febuxostat, also known as Uloric and TMX-67, is a xanthine oxidase inhibitor used to treat hyperuricemia and chronic gout.

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	36.68	115.94
DMF	30.0	94.82
DMF:PBS (pH 7.2) (1:1)	0.5	1.58
Ethanol	10.41	32.90

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.16 mL	15.80 mL	31.61 mL
5 mM	0.63 mL	3.16 mL	6.32 mL
10 mM	0.32 mL	1.58 mL	3.16 mL
50 mM	0.06 mL	0.32 mL	0.63 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. Geng Q, Zhang H, Cui Y, Wei Q, Wang S. Febuxostat mitigates IL-18-induced inflammatory response and reduction of extracellular matrix gene. Am J Transl Res. 2021 Mar 15;13(3):979-987. PMID: 33841634; PMCID: PMC8014396.
2. Hao J, Zhang W, Tong R, Huang Z. Febuxostat Prevents the Cytotoxicity of Propofol in Brain Endothelial Cells. ACS Omega. 2021 Feb 15;6(8):5471-5478. doi: 10.1021/acsomega.0c05708. PMID: 33681587; PMCID: PMC7931401.

In vivo study

1. Tsukamoto T, Tsujii M, Odake K, Iino T, Nakamura T, Matsumine A, Sudo A. Febuxostat reduces muscle wasting in tumor-bearing mice with LM8 osteosarcoma cells via inhibition of reactive oxygen species generation. Free Radic Res. 2021 Jul 19:1-11. doi: 10.1080/10715762.2021.1947502. Epub ahead of print. PMID: 34278932.
2. Nessa N, Kobara M, Toba H, Adachi T, Yamamoto T, Kanamura N, Pezzotti G, Nakata T. Febuxostat Attenuates the Progression of Periodontitis in Rats. Pharmacology. 2021;106(5-6):294-304. doi: 10.1159/000513034. Epub 2021 Mar 18. PMID: 33735887.

7. Bioactivity
Biological target:

Product data sheet

Febuxostat (TEI 6720) is selective xanthine oxidase inhibitor with a Ki of 0.6 nM.

In vitro activity

The gene expression level of iNOS was significantly increased by stimulation with IL-18 but greatly suppressed by the introduction of Febuxostat (Figure 4A). The increased release of NO induced by stimulation with IL-18 was significantly inhibited in the presence of Febuxostat (Figure 4B).

Reference: Am J Transl Res. 2021; 13(3): 979–987. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8014396/

In vivo activity

The gingival expression of TNF-α, IL-1β, 4-HNE, and 8-OHdG was up-regulated in rats with periodontitis. Febuxostat significantly reduced alveolar bone loss, proinflammatory cytokine levels, and oxidative stress.

Reference: Pharmacology. 2021;106(5-6):294-304. https://pubmed.ncbi.nlm.nih.gov/33735887/

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.