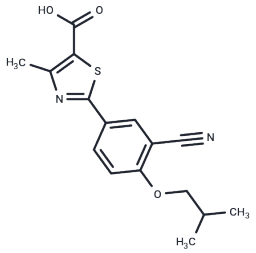
Data Sheet (Cat.No.T0773)

TargetMol

Febuxostat

Chemical Properties



CAS No. : 144060-53-7

Formula: C16H16N2O3S

Molecular Weight: 316.37

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Febuxostat (TEI 6720) is a xanthine oxidase inhibitor.
Targets(IC50)	ROS,Xanthine Oxidase
In vitro	When compared to L-isomer of sugar alone, Febuxostat (5-6 mg/kg/day) in combination with L-isomer of sugar significantly lowered uric acid, blood pressure, insulin, and triglyceride levels in rats; the combination also reduced renal vasoconstriction, glomerular pressure, and afferent arteriole constriction. Febuxostat prevented hyperuricemia, improved proteinuria, and protected renal function in rats treated with 5/6 nephrectomy (5/6 Nx) + oxonic acid (OA) + Febuxostat (Fx), and it also prevented glomerular hypertension in 5/6 Nx + vehicle (V)/OA + Febuxostat (Fx) treated rats. Post-transverse aortic constriction (TAC), Febuxostat (5 mg/kg/day, administered forcefully for 8 days) attenuated TAC-induced left ventricular (LV) hypertrophy and dysfunction. It further attenuated the increase in nitrotyrosine (indicating reduced myocardial oxidative stress), p-mTOR(Ser2488), and p-Erk(Thr202/Tyr204), without affecting total mTOR or Erk levels. Based on evaluations of nitrotyrosine, urinary 8-isoprostane, and thiobarbituric acid reactive substances, Febuxostat significantly inhibited the activity of oxonic acid and reduced oxidative stress in the kidneys of Sprague-Dawley rats with unilateral right nephrectomy and left kidney ischemia/reperfusion (I/R) injury. Febuxostat also decreased endoplasmic reticulum stress induction in these rats, as reflected by the assessment of ATF4, GRP-78, and CHOP markers.
In vivo	Febuxostat inhibits the activity of mixed-type purified bovine milk xanthine oxidase, with Ki and Ki' values of 0.6 nM and 3.1 nM, respectively, and is also effective against both reduced and oxidized forms of xanthine oxidase.

Solubility Information

Solubility	DMSO: 50 mg/mL (158.04 mM),Sonication is recommended. Ethanol: 15.8 mg/mL (49.94 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

In vivo Formulation	10% DMSO+90% Corn Oil: 2.5 mg/mL (7.9 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.1609 mL	15.8043 mL	31.6086 mL
5 mM	0.6322 mL	3.1609 mL	6.3217 mL
10 mM	0.3161 mL	1.5804 mL	3.1609 mL
50 mM	0.0632 mL	0.3161 mL	0.6322 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Takano Y, et al. Life Sci, 2005, 76(16), 1835-1847.
Wang F, Ye W, Wang S, et al. D Discovery of a new inhibitor targeting PD-L1 for cancer immunotherapy. Neoplasia. 2021, 23(3): 281-293.
Sánchez-Lozada LG, et al. Am J Physiol Renal Physiol. 2008 Apr;294(4):F710-8.
Sánchez-Lozada LG, et al. Nephron Physiol. 2008;108(4):p69-78.
Xu X, et al. Card Fail, 2008, 14(9), 746-753.
Tsuda H, et al. Biochem Biophys Res Commun, 2012, 427(2), 266-272.
Wang F, Ye W, Wang S, et al. D. Discovery of a new inhibitor targeting PD-L1 for cancer immunotherapy[J]. Neoplasia. 2021, 23(3): 281-293.