Product Data Sheet

Product Name: Febuxostat D9
Cat. No.: GC36036

Chemical Properties

Cas. No.	1246819-50-0		
SMILES	CC1=C(C(O)=O)SC(C2=CC=C(OC([2H])([2H])C(C([2H])([2H])[2H])([2H])C([2H])([2H])[2H])C(C#N)=C2)=N1		
Formula	$C_{16}H_7D_9N_2O_3S$	M.Wt	325.43
Solubility	DMSO: 1 mg/ml	Storage	Store at -20°C
General tips	For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ for several months.		
Shipping Condition	Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.		
Structure	Febuxostat D9		

Background

Febuxostat-d_9 is intended for use as an internal standard for the quantification of febuxostat by GC- or LC-MS. Febuxostat is an antihyperuricemic nonpurine inhibitor of both the oxidized and reduced forms of xanthine oxidase.[1] It inhibits bovine milk xanthine oxidase as well as mouse and rat liver xanthine oxidase/xanthine dehydrogenase (IC_{50}s = 1.4, 1.8, and 2.2 nM, respectively).[2] It is 10-30 times more potent than the hypoxanthine analog allopurinol .[3,4] Febuxostat decreases the serum level of urate in a potassium oxonate rat model of hyperuricemia (ED_{50} = 1.5 mg/kg).[2] It reduces hepatic macrovesicular steatosis in mice fed a high-fat diet containing *trans* fatty acids when administered at a dose of 1 mg/kg per day.[5] Febuxostat (0.75 mg/kg) also increases CNS expression of glutamate oxaloacetate transaminase 2 (GOT2) and improves neurological symptoms in a mouse model of secondary progressive experimental autoimmune encephalomyelitis (EAE).[6] Formulations containing febuxostat have been used in the treatment of symptomatic hyperuricemia in patients with gout.

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1.Okamoto, K., Eger, B.T., Nishino, T., et al.An extremely potent inhibitor of xanthine oxidoreductase. Crystal structure of the enzyme-inhibitor complex and mechanism of inhibitionJ. Biol. Chem.278(3)1848-1855(2003) 2.Osada, Y., Tsuchimoto, M., Fukushima, H., et al.Hypouricemic effect of the novel xanthine oxidase inhibitor, TEI-6720, in rodentsEur. J. Pharmacol.241(2-3)183-188(1993) 3.Takano, Y., Hase-Aoki, K., Horiuchi, H., et al.Selectivity of febuxostat, a novel non-purine inhibitor of xanthine oxidase/xanthine dehydrogenaseLife Sci.76(16)1835-1847(2005) 4.Bisht, M., and Bist, S.S.Febuxostat: A novel agent for management of hyperuricemia in goutIndian J. Pharm. Sci.73(6)597-600(2011) 5.Nakatsu, Y., Seno, Y., Kushiyama, A., et al.The xanthine oxidase inhibitor febuxostat suppresses development of nonalcoholic steatohepatitis in a rodent modelAm. J. Physiol. Gastrointest. Liver Physiol.309(1)G42-G51(2015) 6.Honorat, J.A., Nakatsuji, Y., Shimizu, M., et al.Febuxostat ameliorates secondary progressive experimental autoimmune encephalomyelitis by restoring mitochondrial energy production in a GOT2-dependent mannerPLoS One12(11)e0187215(2017)

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