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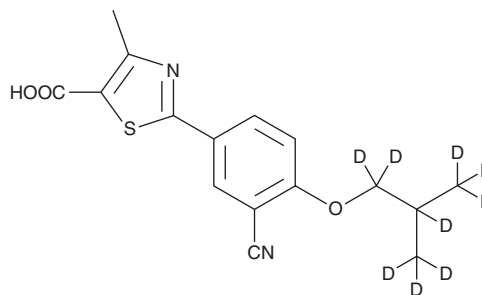
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PRODUCT INFORMATION



Febuxostat-d₉ Item No. 25033

CAS Registry No.: 1246819-50-0
Formal Name: 2-[3-cyano-4-[2-(methyl-d₃)propoxy-1,1,2,3,3,3-d₆]phenyl]-4-methyl-5-thiazolecarboxylic acid
MF: C₁₆H₇D₉N₂O₃S
FW: 325.4
Chemical Purity: ≥98% (Febuxostat)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₉); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Febuxostat-d₉ is intended for use as an internal standard for the quantification of febuxostat (Item No. 14127) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated versus unlabeled).

Febuxostat-d₉ is supplied as a solid. A stock solution may be made by dissolving the febuxostat-d₉ in the solvent of choice, which should be purged with an inert gas. Febuxostat-d₉ is soluble in the organic solvent DMSO at a concentration of approximately 1 mg/ml.

Description

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 (IC₅₀s = 1.4, 1.8, and 2.2 nM, respectively).² It is 10-30 times more potent than the hypoxanthine analog allopurinol (Item No. 10012597; K_s = 0.7 nM and 0.7 μM, respectively).^{3,4} Febuxostat decreases the serum level of urate in a potassium oxonate rat model of hyperuricemia (ED₅₀ = 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.

References

1. Okamoto, K., Eger, B.T., Nishino, T., *et al.* *J. Biol. Chem.* **278**(3), 1848-1855 (2003).
2. Osada, Y., Tsuchimoto, M., Fukushima, H., *et al.* *Eur. J. Pharmacol.* **241**(2-3), 183-188 (1993).
3. Takano, Y., Hase-Aoki, K., Horiuchi, H., *et al.* *Life Sci.* **76**(16), 1835-1847 (2005).
4. Bisht, M. and Bist, S.S. *Indian J. Pharm. Sci.* **73**(6), 597-600 (2011).
5. Nakatsu, Y., Seno, Y., Kushiya, A., *et al.* *Am. J. Physiol. Gastrointest. Liver Physiol.* **309**(1), G42-G51 (2015).
6. Honorat, J.A., Nakatsuji, Y., Shimizu, M., *et al.* *PLoS One* **12**(11), e0187215 (2017).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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