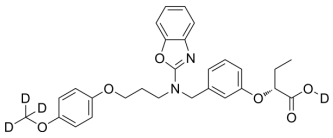
Pemafibrate-d_4

Cat. No.:	HY-17618S
CAS No.:	2924193-31-5
Molecular Formula:	$C_{28}H_{26}D_4N_2O_6$
Molecular Weight:	494.57
Target:	PPAR; Isotope-Labeled Compounds
Pathway:	Cell Cycle/DNA Damage; Metabolic Enzyme/Protease; Vitamin D Related/Nuclear Receptor; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Pemafibrate-d_4 is deuterated labeled 2-Phenylacetaldehyde. 2-Phenylacetaldehyde is an endogenous metabolite.
In Vitro	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1]. Pemafibrate is a potent PPARα agonist, with EC_{50}s of 1 nM, 1.10 μM and 1.58 μM for h-PPARα, h-PPARγ and h-PPARδ, respectively. Pemafibrate is more than 1000 fold selective towards PPARα than PPARγ and PPARδ[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Pemafibrate (3 mg/kg, p.o.) increases plasma h-apoA-I in human apoA-I (h-apoA-I) transgenic mice, and shows higher levels of plasma h-apoA-I than fenofibrate at 300 mg/kg[2]. Pemafibrate (0.03?mg/kg) decreases levels of triglycerides and aspartate aminotransferase (AST) in PEMA-L (db/db) mice. Pemafibrate (0.1?mg/kg) not only shows such effects but increases liver weight in PEMA-H (db/db) mice. Pemafibrate enhances the pathogenesis in a rodent model of nonalcoholic steatohepatitis (NASH). Pemafibrate significantlly reduces the grade of hepatocyte ballooning in PEMA-H mice. Furthermore, Pemafibrate modulates lipid turnover and induces uncoupling protein 3 (UCP 3) expression in the liver[3]. Pemafibrate (K-877, 0.0005%) contained in high-fat diet (HFD) inhibits the body weight gain in mice. Pemafibrate significantly decreases the abundance of triglyceride (TG)-rich lipoproteins, including remnants, in postprandial plasma of mice. Pemafibrate also decreases intestinal mRNA expression of ApoB and Npc1l1[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Yamazaki Y, et al. Design and synthesis of highly potent and selective human peroxisome proliferator-activated receptor alpha agonists. Bioorg Med Chem Lett. 2007 Aug 15;17(16):4689-93. Epub2007 May 24.

[2]. Honda Y, et al. Pemafibrate, a novel selective peroxisome proliferator-activated receptor alpha modulator, improves the pathogenesis in a rodent model of nonalcoholic steatohepatitis. Sci Rep. 2017 Feb 14;7:42477.

[3]. Sairyo M, et al. A Novel Selective PPARα Modulator (SPPARMα), K-877 (Pemafibrate), Attenuates Postprandial Hypertriglyceridemia in Mice. J Atheroscler Thromb. 2018 Feb 1;25(2):142-152.

[4]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

Caution: Product has not been fully validated for medical applications. For research use only.

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