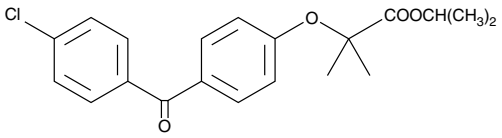
Product Information

Fenofibrate

Item No. 10005368

CAS Registry No.: 49562-28-9
Formal Name: 2-[4-(4-chlorobenzoyl)phenoxy]-2-methyl-propanoic acid, 1-methylethyl ester
MF: $C_{20}H_{21}ClO_4$
FW: 360.8
Purity: ≥98%
Stability: ≥2 years at -20°C
Supplied as: A crystalline solid
UV/Vis.: λ_{max}: 287 nm



Laboratory Procedures

For long term storage, we suggest that fenofibrate be stored as supplied at -20°C. It should be stable for at least two years.

Fenofibrate is supplied as a crystalline solid. A stock solution may be made by dissolving the fenofibrate in an organic solvent purged with an inert gas. Fenofibrate is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of fenofibrate in these solvents is 1, 15, and 30 mg/ml, respectively.

Fenofibrate is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, fenofibrate should first be dissolved in DMF and then diluted with the aqueous buffer of choice. Fenofibrate has a solubility of 0.25 mg/ml in a 1:3 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

PPARα is a ligand-activated transcription factor involved in the regulation of lipid homeostasis.[1,2] Activation of PPARα results in expression of a variety of genes, particularly those involved in fatty acid β-oxidation, binding, and transport.[3] Fenofibrate is PPARα agonist and a member of a class of hypolipidemic drugs that includes clofibrate and benzafibrate, which have been used clinically to treat dyslipidemia and cardiovascular disease. In a transactivation assay, fenofibrate exhibits EC_{50} values of 18 and 30 µM for murine and human PPARα, respectively.[4] It also binds to PPARγ, but with at least 10-fold less affinity and is inactive at PPARδ at concentrations up to 100 µM.

References

1. Latruffe, N. and Vamecq, J. Peroxisome proliferators and peroxisome proliferator activated receptors (PPARs) as regulators of lipid metabolism. *Biochimie* **79**, 81-94 (1997).
2. Lemberger, T., Desvergne, B., and Wahli, W. Peroxisome proliferator-activated receptors: A nuclear receptor signaling pathway in lipid physiology. *Annu. Rev. Cell Dev. Biol.* **12**, 335-363 (1996).
3. Mandard, S., Müller, M., and Kersten, S. Peroxisome proliferator-activated receptor α target genes. *Cell. Mol. Life Sci.* **61**, 393-416 (2004).
4. Willson, T.M., Brown, P.J., Sternbach, D.D., *et al.* The PPARs: From orphan receptors to drug discovery. *J. Med. Chem.* **43(4)**, 528-550 (2000).

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