

Product Data Sheet

Product Name: Orlistat-d3

Cat. No.: GC49236

Chemical Properties

Cas. No. 1356930-46-5

SMILES [2H]C([2H])([2H])C(C)C[C@H](NC=O)C(O[C@@H](CCCCCCCCCCC)C[C@@H]1OC([C@H]1CCCCC(=O)=O)=O

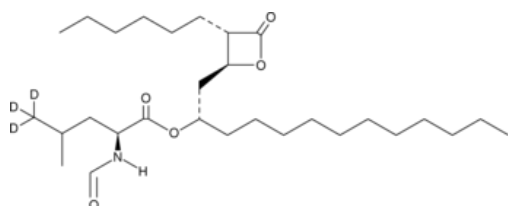
Formula C₂₉H₅₀D₃NO₅ M.Wt 498.8

Solubility Chloroform: slightly soluble, Methanol: slightly soluble Storage -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C 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



Background

Orlistat-d₃ is intended for use as an internal standard for the quantification of orlistat by GC- or LC-MS. Orlistat is a digestive lipase inhibitor.^{1,2,3} It inhibits diacylglycerol lipase α (DAGL α), DAGL β , α/β -hydrolase domain-containing protein 12 (ABHD12), ABHD16A, and platelet-activating factor acetylhydrolase (PAF-AH; IC₅₀s = 0.06, 0.1, 0.08, 0.03, and 0.05 μ M, respectively), as well as pancreatic lipase and hormone-sensitive lipase (IC₅₀s = 0.65 and 2.1 μ g/ml, respectively) but does not inhibit fatty acid amide hydrolase (FAAH) or KIAA1363 (IC₅₀s = >100 μ M for both). Orlistat decreases ionomycin-induced production of the endocannabinoid 2-arachidonoyl glycerol (2-AG) in N18TG2 murine neuroblastoma cells when used at a concentration of 1 μ M.⁴ It also inhibits fatty acid synthase (FASN; K_{iapp} = ~0.1 μ M for the human enzyme) and the proliferation of PC3 prostate

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

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cancer cells in a concentration-dependent manner.⁵ Orlistat (10 mg/kg) decreases serum cholesterol levels and total body weight in a mouse model of obesity induced by a high-fat diet.⁶ Formulations containing orlistat have been used in the treatment of adult obesity.

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2. Hoover, H.S., Blankman, J.L., Niessen, S., et al. Selectivity of inhibitors of endocannabinoid biosynthesis evaluated by activity-based protein profiling. *Bioorg. Med. Chem. Lett.* 18(22)5838-5841(2008)
3. Bustanji, Y., Issa, A., Mohammad, M., et al. Inhibition of hormone sensitive lipase and pancreatic lipase by *Rosmarinus officinalis* extract and selected phenolic constituents. *J. Med. Plant Res.* 4(21)2235-2242(2010)
4. Bisogno, T., Cascio, M.G., Saha, B., et al. Development of the first potent and specific inhibitors of endocannabinoid biosynthesis. *Biochim. Biophys. Acta* 1761(2)205-212(2006)
5. Kridel, S.J., Axelrod, F., Rozenkrantz, N., et al. Orlistat is a novel inhibitor of fatty acid synthase with antitumor activity. *Cancer Res.* 64(6)2070-2075(2004)
6. Ji, W., Zhao, M., Wang, M., et al. Effects of canagliflozin on weight loss in high-fat diet-induced obese mice. *PLoS One* 12(6)e0179960(2017)

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