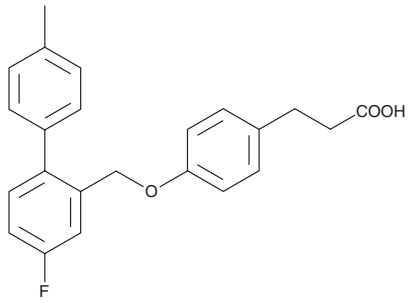
PRODUCT INFORMATION

TUG-891

Item No. 17035



CAS Registry No.:	1374516-07-0
Formal Name:	4-[(4-fluoro-4'-methyl[1,1'-biphenyl]-2-yl)methoxy]-benzenepropanoic acid
MF:	$C_{23}H_{21}FO_3$
FW:	364.4
Purity:	≥98%
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥2 years

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

Laboratory Procedures

TUG-891 is supplied as a crystalline solid. A stock solution may be made by dissolving the TUG-891 in the solvent of choice, which should be purged with an inert gas. TUG-891 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of TUG-891 in ethanol and DMF is approximately 1 mg/ml and approximately 10 mg/ml in DMSO.

TUG-891 is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, TUG-891 should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. TUG-891 has a solubility of approximately 0.1 mg/ml in a 1:5 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

TUG-891 is an agonist of free fatty acid receptor 4 (FFAR4/GPR120; EC_{50}s = 0.0436 and 0.0169 µM for the human and mouse receptors, respectively).[1] It is selective for FFAR4 over FFAR1/GPR40 (EC_{50}= 64.5 µM for the human receptor) and is inactive against FFAR2/GPR43 and FFAR3/GPR41. TUG-891 (1 µM) inhibits lysophosphatidic acid- or EGF-induced proliferation and migration of DU145 and PC3 prostate cancer cells.[2] It stimulates glucagon-like peptide 1 (GLP-1) release in STC-1 enteroendrocrine cells and glucose uptake in 3T3-L1 adipocytes, as well as inhibits LPS-induced TNF-α release in RAW 264.7 macrophages when used at a concentration of 10 µM.[3] TUG-891 (20 mg/kg) reduces sleep fragmentation-induced increases in food consumption and epididymal fat mass in mice.[4]

References

1. Shimpukade, B., Hudson, B.D., Hovgaard, C.K., *et al.* Discovery of a potent and selective GPR120 agonist. *J. Med. Chem.* **55(9)**, 4511-4515 (2012).
2. Liu, Z., Hopkins, M.M., Zhang, Z., *et al.* Omega-3 fatty acids and other FFA4 agonists inhibit growth factor signaling in human prostate cancer cells. *J. Pharmacol. Exp. Ther.* **352(2)**, 380-394 (2015).
3. Hudson, B.D., Shimpukade, B., Mackenzie, A.E., *et al.* The pharmacology of TUG-891, a potent and selective agonist of the free fatty acid receptor 4 (FFA4/GPR120), demonstrates both potential opportunity and possible challenges to therapeutic agonism. *Mol. Pharmacol.* **84(5)**, 710-725 (2013).
4. Gozal, D., Qiao, Z., Almendros, I., *et al.* Treatment with TUG891, a free fatty acid receptor 4 agonist, restores adipose tissue metabolic dysfunction following chronic sleep fragmentation in mice. *Int. J. Obes. (Lond.)* **40(7)**, 1143-1149 (2016).

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