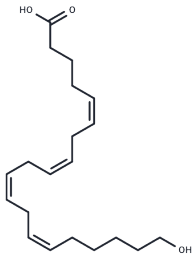
Data Sheet (Cat.No.T14021)

TargetMol
YOUR TARGET MOLECULES

20-HETE

Chemical Properties



CAS No. :	79551-86-3
Formula:	C20H32O3
Molecular Weight:	320.47
Appearance:	no data available
Storage:	store at low temperature Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	20-HETE (20-hydroxy Arachidonic Acid) is a CYP450 metabolite and a potent vasoconstrictor and it is an endogenous inhibitor of the large-conductance Ca2+-activated K+ channel in renal arterioles. 20-HETE increases NADPH oxidase, ROS, and NF-κB activity, and it also inhibits endothelial NO synthase and inhibits apoptosis of pulmonary artery smooth muscle cells[1][2]. 20-HETE constricts smooth muscles, stimulates smooth muscle proliferation and migration.
Targets(IC50)	Others
In vitro	20-HETE promotes platelet-derived growth factor-stimulated vascular smooth muscle cell migration via pathways that involve MEK and phosphatidylinositol 3-kinase activation[2]. 20-HETE induces the phosphorylation of ERK1/2, a MAPK that plays a pivotal role in the proliferation induced by the activation of receptor tyrosine kinases and G protein-coupled receptors. 20-HETE (1-1000 nM) reduces the diameter of isolated perfused small renal arteries of the rat by approximately 15% tetraethylammonium (1 mM) blocked the vasoconstrictor response to 20-HETE (100 nM)[1]. Addition of 20-HETE to the bath (1-100 nM), reduces the frequency of opening of the large-conductance Ca2+-activated K+ channel recorded using cell-attached patches on vascular smooth muscle cells (VSM)[1].
In vivo	In Sprague-Dawley rats, administration of the 20-HETE inhibitor HET0016 or the 20-HETE antagonist 20-HEDE preventes DHT-induced increases in blood pressure as well as abrogates DHT-induced increases in the media-to-lumen ratio (M/L), media thickness, and collagen IV deposition in renal interlobar arteries. 20-HETE is a key regulator of microvascular remodeling in hypertension; its effect is independent of blood pressure elevation and androgen levels[2]. 20-HETE contributes to DHT-induced vascular remodeling independent of blood pressure elevation[2]. In Cyp4a14-/- mice, which display androgen-driven and 20-HETE-dependent hypertension, treatment with the 20-HETE antagonist abolishes remodeling of renal resistance arteries measured as media thickness and M/L.

Solubility Information

Solubility	DMSO: 3.2 mg/mL (9.99 mM), Ethanol: 6.67 mg/mL (20.81 mM),Sonication is recommended.

(< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.1204 mL	15.6021 mL	31.2042 mL
5 mM	0.6241 mL	3.1204 mL	6.2408 mL
10 mM	0.312 mL	1.5602 mL	3.1204 mL
50 mM	0.0624 mL	0.312 mL	0.6241 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Li B, Ma Y, Tan L, et al. 20-Hydroxytetraenoic acid induces hepatic fibrosis via the TGF-β1/Smad3 signaling pathway. Toxicology Letters. 2022