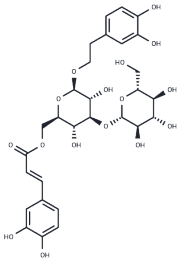
Data Sheet (Cat.No.T5796)

TargetMol

Plantainoside D

Chemical Properties



CAS No. : 147331-98-4

Formula: C29H36O16

Molecular Weight: 640.59

Storage: Keep away from direct sunlight
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	Plantainoside D (Isoplantamajoside) shows potent antioxidative effects as those of ascorbic acid, it shows angiotensin-converting enzyme (ACE) inhibitory inhibitory activity in vitro with the IC(50) value of 2.17 mM, it also shows inhibitory activity against PKCalpha with the IC50 value14.8microM.
Targets(IC50)	Apoptosis,RAAS,Calcium Channel,NF-κB,NOD-like Receptor (NLR),Angiotensin-converting Enzyme (ACE),IκB/IKK,PKC,ROS,Sirtuin
In vitro	Plantago asiatica L. and its major constituents(such as Plantainoside D) have ACE inhibitory activity in vitro. The identified compounds contribute to the angiotensin-converting enzyme-inhibitory activity of the extract[1].In vitro, Adriamycin(ADR) caused dose-dependent toxicity in H9c2 cardiac muscle cells. Pre-treatment of the cardiac muscle cells with Plantainoside D(PD) significantly reduced ADR-induced apoptosis of cardiac muscle cells. PD inhibited the ROS produced by ADR in the cardiac muscle cells. As well, PD increased GSH(glutathione), compared with ADR. In response to ADR, NF-kappaB was activated in H9c2 cells. However the treatment of PD reduced the activation of NF-kappaB.The NF-kappaB inhibitor, PDTC, inhibited the cytotoxic effect on ADR-induced apoptosis in cardiac muscle cells. IkappaBalpha-dominant negative plasmid-overexpression abrogated ADR-induced apoptosis in H9c2 cardiac muscle cells[2].
Kinase Assay	Ethanolic extract of the seeds of Plantago asiatica L. showed significant inhibitory activity of angiotensin-converting enzyme (ACE) determined by monitoring the transformation from a substrate hippuryl-histidyl-leucine (HHL) to the product hippuric acid (HA) in vitro using an UPLC-MS method. The bioguided fractionation of the extract resulted in the isolation of four ACE inhibitory active phenylpropanoid glycosides acteoside, isoacteoside, Plantainoside D, and plantamajoside with IC(50) values of 2.69 mM, 2.46 mM, 2.17 mM, and 2.47 mM, respectively. Their structures were elucidated through the analysis of NMR, UV, IR and MS data[1].

Solubility Information

Solubility	H2O: 10 mg/mL (15.61 mM),Sonication is recommended. DMSO: 55 mg/mL (85.86 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5611 mL	7.8053 mL	15.6106 mL
5 mM	0.3122 mL	1.5611 mL	3.1221 mL
10 mM	0.1561 mL	0.7805 mL	1.5611 mL
50 mM	0.0312 mL	0.1561 mL	0.3122 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Geng F , Yang L , Chou G , et al. Bioguided isolation of angiotensin-converting enzyme inhibitors from the seeds of Plantago asiatica L.[J]. Phytotherapy Research, 2010, 24(7):0-0.

Kim D S , Woo E R , Chae S W , et al. Plantainoside D protects adriamycin-induced apoptosis in H9c2 cardiac muscle cells via the inhibition of ROS generation and NF-κB activation[J]. Life Sciences, 2007, 80(4):0-323.