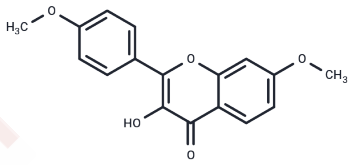
Data Sheet (Cat.No.T210631)

TargetMol

7,4'-Dimethoxy-3-hydroxyflavone

Chemical Properties



CAS No. : 13198-99-7

Formula: C17H14O5

Molecular Weight: 298.29

Storage: 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	7,4'-Dimethoxy-3-hydroxyflavone is an orally active PAR4 antagonist. This compound inhibits PAR4-mediated human platelet aggregation with an IC50 of 1.4 μM. It disrupts PAR4-mediated aggregation and related signaling pathways, including NF-κB, Ca2+/protein kinase C (PKC), Akt, ERK, and p38. In a streptozotocin (STZ)-induced diabetic mouse model, 7,4'-Dimethoxy-3-hydroxyflavone inhibits vascular PAR4 expression, improves endothelial dysfunction, and reduces oxidative stress. Additionally, it prevents thrombosis in mice without affecting bleeding time.
Targets(IC50)	ERK,Calcium Channel,NF-κB,Akt,Protease-activated Receptor,p38 MAPK,PKC,ROS
In vitro	7,4'-Dimethoxy-3-hydroxyflavone, administered at concentrations ranging from 1 to 10 μM for periods of 6 to 48 hours, inhibits high glucose-induced endothelial PAR4 expression in EA.hy 926 cells, a function not observed with other PAR4 antagonists like 7,4'-dimethoxyflavone (DMF, 10 μM), YD-3 (1 μM), or BMS-986120 (BMS; 1 nM). The compound blocks high glucose-induced endothelial PAR4 activity in these cells by completely inhibiting PAR4-mediated calcium responses and significantly reducing the calcium response to AYPGKF-NH_2 (a PAR4 activating peptide) or thrombin. At 1-10 μM for 24 hours, 7,4'-Dimethoxy-3-hydroxyflavone prevents PAR4-aggravated endothelial dysfunction in a high glucose environment by inhibiting ROS-driven NF-κB activation, subsequently suppressing PAR4 expression. Furthermore, at concentrations of 1-5 μM for 3-5 minutes, it inhibits PAR4-mediated human platelet aggregation and secretion by blocking the activation of GPIIb/IIIa, a critical step in PAR4-activating peptide-induced platelet aggregation. Additionally, at 1-5 μM for 1-3 minutes, it disrupts downstream PAR4 signaling pathways in platelets, including Ca^{2+}/protein kinase C, Akt, ERK, and p38. In CHO-K1 cells, concentrations of 5-20 μM for 10 minutes inhibit β-arrestin recruitment to PAR4 in a concentration-dependent manner. At 5-20 μM for 3 minutes, 7,4'-Dimethoxy-3-hydroxyflavone enhances the inhibition effect of Vorapaxar and Ticagrelor on thrombin-induced platelet aggregation. Lastly, at 5-10 μM for 10 minutes, it reduces thrombosis under flow conditions in whole blood.
In vivo	The compound 7,4'-Dimethoxy-3-hydroxyflavone (DMF-OH), administered orally at a dose of 20 mg/kg daily for 21 days, reduces vascular PAR4 expression, improves endothelial dysfunction, and mitigates oxidative stress damage in a Streptozotocin (STZ) -induced diabetic mouse model. Additionally, a single intraperitoneal dose of 7,4'-Dimethoxy-3-hydroxyflavone (1-7.5 mg/kg) effectively prevents $FeCl_3$-induced carotid artery occlusion without affecting tail bleeding time.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.3524 mL	16.7622 mL	33.5244 mL
5 mM	0.6705 mL	3.3524 mL	6.7049 mL
10 mM	0.3352 mL	1.6762 mL	3.3524 mL
50 mM	0.067 mL	0.3352 mL	0.6705 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.