7,4'-Dihydroxyflavone

Cat. No.: HY-N2609

CAS No.: 2196-14-7

Molecular Formula: $C_{15}H_{10}O_4$

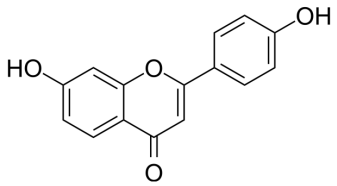
Molecular Weight: 254.24

Target: CCR; NF-κB

Pathway: GPCR/G Protein; Immunology/Inflammation; NF-κB

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 125 mg/mL (491.66 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.9333 mL	19.6665 mL	39.3329 mL
	5 mM	0.7867 mL	3.9333 mL	7.8666 mL
	10 mM	0.3933 mL	1.9666 mL	3.9333 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.08 mg/mL (8.18 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (8.18 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (8.18 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

7,4'-Dihydroxyflavone (7,4'-DHF) is a flavonoid, which can be isolated from Glycyrrhiza uralensis. 7,4'-Dihydroxyflavone is eotaxin/CCL11 inhibitor and CBR1 inhibitor (IC_{50}=0.28 μM). 7,4'-Dihydroxyflavone has the ability to consistently suppress eotaxin production and prevent dexamethasone (Dex)⊠paradoxical adverse effects on eotaxin production[1]. 7,4'-Dihydroxyflavone (7,4'-DHF) inhibits MUC5AC gene expression, mucus production and secretion via regulation of NF-κB, STAT6 and HDAC2.7,4'-Dihydroxyflavone (7,4'-DHF) decreases phorbol 12-myristate 13-acetate (PMA) stimulated NCI-H292 human airway epithelial cell MUC5AC gene expression and mucus production with IC_{50} value of 1.4 μM[1].

IC_{50} & Target	IC50: 1.4 μM (NCI-H292 human airway epithelial cell) (7,4'-Dihydroxyflavone)[1]; 0.28 μM CBR1[2]
In Vitro	7,4'-Dihydroxyflavone (10 μM, 72-120 h) inhibits constitutive eotaxin production in HFL-1 cells[1]. 7,4'-Dihydroxyflavone (10 μM, 72 h) decreases IL-4/TNF-α stimulated p-STAT6, p-IκBα, and p-Akt expression in HFL-1 cells[1]. 7,4'-Dihydroxyflavone (10 μM, 30 min) inhibits Phorbol 12-myristate 13-acetate (HY-18739) (10 ng/mL for 24 h)-induced MUC5AC production and gene expression in NCI-H292 cells[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only. Western Blot Analysis[2]
In Vivo	7,4'-Dihydroxyflavone (6 μg, oral gavage, 4 weeks) inhibits bronchoalveolar lavage (BAL) MUC5AC secretion in a murine asthma model[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Line:	NCI-H292 cells stimulated with 10 ng/mL PMA for 30 min
Concentration:	2 and 10 μM
Incubation Time:	24 h
Result:	Inhibited PMA-stimulated NF-κB (p65) activation and STAT6 phosphorylation.

CUSTOMER VALIDATION

- Diabetologia. 2021 Dec 16.

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REFERENCES

[1]. Arai Y, et al. Structure-activity relationship of flavonoids as potent inhibitors of carbonyl reductase 1 (CBR1). Fitoterapia. 2015 Mar;101:51-6.

[2]. Liu C, et al. The Flavonoid 7,4'-Dihydroxyflavone Prevents Dexamethasone Paradoxical Adverse Effect on Eotaxin Production by Human Fibroblasts. Phytother Res. 2017 Mar;31(3):449-458.

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