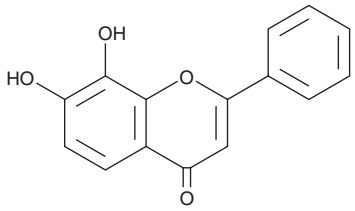
PRODUCT INFORMATION

7,8-Dihydroxyflavone

Item No. 16946

CAS Registry No.:	38183-03-8
Formal Name:	7,8-dihydroxy-2-phenyl-4H-1-benzopyran-4-one
Synonym:	7,8-DHF
MF:	$C_{15}H_{10}O_4$
FW:	254.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 210, 270 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years
Item Origin:	Synthetic



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

Laboratory Procedures

7,8-Dihydroxyflavone (7,8-DHF) is supplied as a crystalline solid. A stock solution may be made by dissolving the 7,8-DHF in the solvent of choice, which should be purged with an inert gas. 7,8-DHF is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of 7,8-DHF in these solvents is approximately 1, 10, and 20 mg/ml, respectively.

7,8-DHF is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, 7,8-DHF should first be dissolved in DMF and then diluted with the aqueous buffer of choice. 7,8-DHF has a solubility of approximately 0.2 mg/ml in a 1:4 solution of DMF:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

7,8-DHF is a flavone that has been found in G. aesculifolia and has diverse biological activities.[1-4] It binds to tropomyosin-related kinase B (TrkB; K_d = 320 nM) and induces TrkB autophosphorylation in primary mouse hippocampal neurons.[1] *In vivo*, 7,8-DHF (5 mg/kg) reduces neuronal apoptosis and reduces infarct volume in a mouse model of ischemia-reperfusion injury induced by middle cerebral artery occlusion (MCAO). It reduces striatal nigral neuronal apoptosis in a mouse model of MPTP-induced Parkinson's disease. 7,8-DHF (5 mg/kg) increases survival, neocortical volume, and whole brain volume in an N171-82Q mouse model of Huntington's disease.[2] It increases bone mineral density and reduces bone loss in a rat model of ovariectomy-induced osteoporosis when administered at a dose of 10 mg/kg.[3] 7,8-DHF (5 mg/kg per day, i.p.) reduces blood glucose levels, pancreatic vascular congestion, and inflammatory cell infiltration, as well as hepatic vascular congestion and DNA damage-inducible transcript 3 (DDIT3) and glucose-regulated protein 78 (GRP78) levels, markers of endoplasmic reticulum (ER) stress, in a mouse model of cafeteria diet-induced metabolic syndrome.[4]

References

1. Jang, S.W., Liu, X., Yepes, M., *et al.* A selective TrkB agonist with potent neurotrophic activities by 7,8-dihydroxyflavone. *Proc. Natl. Acad. Sci. USA* **107(6)**, 2687-2692 (2010).
2. Schindler, U., Strobel, H., Schönafinger, K., *et al.* Biochemistry and pharmacology of novel anthranilic acid derivatives activating heme-oxidized soluble guanylyl cyclase. *Mol. Pharmacol.* **69(4)**, 1260-1268 (2006).
3. Xue, F., Zhao, Z., Gu, Y., *et al.* 7,8-Dihydroxyflavone modulates bone formation and resorption and ameliorates ovariectomy-induced osteoporosis. *Elife* **10**, 64872 (2021).
4. Sahin, E., Saglam, N., Erdem, S., *et al.* 7,8-Dihydroxyflavone alleviates endoplasmic reticulum stress in cafeteria diet-induced metabolic syndrome. *Life Sci.* **306**, 120781 (2022).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM