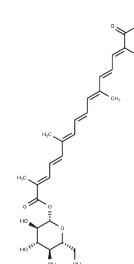


Crocin-4

Chemical Properties

CAS No. :	55750-86-2
Formula:	C ₂₇ H ₃₆ O ₉
Molecular Weight:	504.576
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	Crocin-4, a carotenoid compound found in saffron, possesses potent antioxidant properties and can penetrate the brain. It effectively inhibits the aggregation and deposition of A β fibrils, making it useful for Alzheimer's Disease research. Additionally, Crocin-4 demonstrates antitumor and anti-inflammatory activities.
Targets(IC50)	Others, Reactive Oxygen Species
In vitro	Crocin-4, within the concentration range of 0.1-1000 μ M and over a period of 24-72 hours, maintains the viability of neuron-like cells without causing harm. At a concentration of 1 mM and after 72 hours of treatment, it achieves a downregulation in key Alzheimer's disease-related proteins in SH-SY5Y-APP cells, specifically decreasing total Presenilin 1 (PSEN1), Presenilin complexes (PSEN1 and PSEN2), Beta-Secretase 1 (BACE1), APP-C99, and soluble APP α , while elevating the levels of PSEN1 C-terminal fragment (PSEN1-CTF) and PSEN2. Furthermore, in PC12-htau cells treated under the same conditions, it suppresses Glycogen Synthase Kinase 3 beta (GSK3 β) and Extracellular Signal-Regulated Kinase 1/2 (ERK1/2), markedly reducing total tau protein levels as well as the phosphorylation of tau at pThr231 and pSer199/Ser202 epitopes. Western Blot analysis confirms these effects, showing significant reductions in the amyloidogenic pathway markers, BACE1 (20%) and APP-C99 (28%), and the non-amyloidogenic marker sAPP α (44%), while PSEN1-CTF increased by 26% and PSEN2 by 43%. In PC12-htau cells, there was a considerable decrease in total tau (32%) and phosphorylated tau (pThr231 and pSer199/Ser202-tau decreased by 22% and 75%, respectively), accompanied by downregulation of both active and inactive GSK3 β (by 34% and 30% for total and pSer9-GSK3 β , respectively) and ERK1/2 (total ERK2 by 37%, pERK1 by 40%, and pERK2 by 50%).
In vivo	Crocin-4, administered intraperitoneally at a dose of 50 mg/kg, effectively crosses the Blood-Brain Barrier (BBB) and accumulates in the mouse brain[3].

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.9818 mL	9.9092 mL	19.8185 mL
5 mM	0.3964 mL	1.9818 mL	3.9637 mL
10 mM	0.1982 mL	0.9909 mL	1.9818 mL
50 mM	0.0396 mL	0.1982 mL	0.3964 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

Chalatsa I, et, al. The Crocus sativus Compounds trans-Crocic acid and trans-Crocetin Modulate the Amyloidogenic Pathway and Tau Misprocessing in Alzheimer Disease Neuronal Cell Culture Models. *Front Neurosci.* 2019 Mar 26; 13:249.

Koulakiotis NS, et, al. Crocus-derived compounds alter the aggregation pathway of Alzheimer's Disease: associated beta amyloid protein. *Sci Rep.* 2020 Oct 23;10(1):18150.

Karkoula E, et, al. Trans-crocic acid is not hydrolyzed to crocetin following i.p. administration in mice, while it shows penetration through the blood brain barrier. *Fitoterapia.* 2018 Sep;129:62-72.

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