Crocetin

Cat. No.: HY-N2072

CAS No.: 27876-94-4

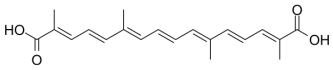
Molecular Formula: $C_{20}H_{24}O_4$

Molecular Weight: 328.4

Target: iGluR; Endogenous Metabolite

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling; Metabolic Enzyme/Protease

Storage: Powder -20°C 3 years
4°C 2 years
* The compound is unstable in solutions, freshly prepared is recommended.



SOLVENT & SOLUBILITY

In Vitro

DMSO : 1 mg/mL (3.05 mM; Need ultrasonic and warming)

Preparing Stock Solutions

Mass / Solvent / Concentration	1 mg	5 mg	10 mg
1 mM	3.0451 mL	15.2253 mL	30.4507 mL
5 mM	---	---	---
10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

Crocetin (Transcrocetin), extracted from saffron (Crocus sativus L.), acts as an NMDA receptor antagonist with high affinity[1]. Crocetin is capable of crossing the blood-brain barrier and reach the central nervous system (CNS)[2].

IC_{50} & Target

NMDA Receptor

In Vitro

Crocetin, a saffron metabolite originating from the crocin apocarotenoids, has been shown to exert strong NMDA receptor affinity and is thought to be responsible for the CNS activity of saffron.To ensure unchanged viability of Caco-2 cells throughout the transport experiments, cellular mitochondrial dehydrogenase activity of Caco-2 cells is measured by MTT assay after a 24 h incubation period with the test compounds: Hydroalcoholic saffron extract saffron extract (SE, 0.5-1 mg/mL) and crocin-1 (250-1000 μM) reveal no negative significant changes in cellular viability. Crocetin at 10 μM level does not change viability while higher concentrations (40-160 μM) reduces significantly cellular viability[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	Cytotoxicity of test compounds is determined by MTT assay using Caco-2 cells in 96 well plates at a density of 20.000 cells per well in 200 µl FBS-free medium, grown for 96 h and followed by 24 h contact time with the test compounds (100 µL of serum-free media containing SE 0.5, 1, and 2 mg/mL; trans-crocin-1 250, 500, and 1000 µM; Transcrocetin 10, 40, 80, and 160 µM) and incubation at 37°C/5% CO_2. The incubation solutions are aspirated, each well is washed twice with 150 µL of PBS and 50 µL of MTT solution are added (2.5 mg/mL in PBS). Supernatants are discarded and the formed formazan is dissolved in 50 µL of DMSO. The absorption of the resulting solution is determined at λ=492 nm against reference wavelength λ=690 nm[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Lautenschläger M, et al. Intestinal formation of trans-Crocetin from saffron extract (Crocus sativus L.) and in vitro permeation through intestinal and blood brain barrier. Phytomedicine. 2015 Jan 15;22(1):36-44.

[2]. José Bagur M, et al. Saffron: An Old Medicinal Plant and a Potential Novel Functional Food. Molecules. 2017 Dec 23;23(1). pii: E30.

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