

Product Data Sheet

Product Name: Anhydrosafflor yellow B

Cat. No.: GC60587

Chemical Properties

Cas. No. 184840-84-4

SMILES OC[C@@H](O)[C@@H](O)[C@@H]([C@]1([H])[C@](C2=C(C(C(O)=C(C2=O)C(/C=C/C3=CC=C(C=C3)O)=O)([C@]4([H])O[C@@H]([C@H]([C@@H]([C@H]4O)O)O)CO)O)O)([H])C5=C(C(C(O)=C(C5=O)C(/C=C/C6=CC=C(C=C6)O)=O)([C@]7([H])O[C@@H]([C@H]([C@@H]([C@H]7O)O)O)CO)O)O1)O

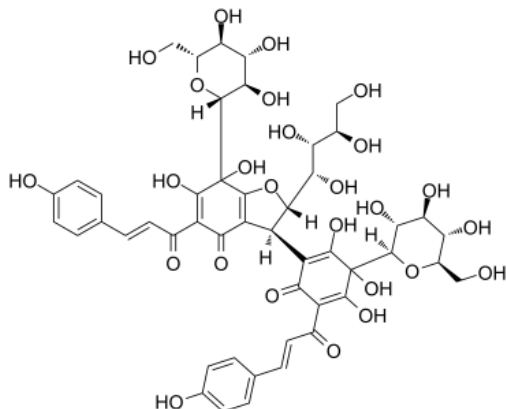
Formula C₄₈H₅₂O₂₆ M.Wt 1044.91

Solubility Storage Store at -20°C

General For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the tips ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Evaluation sample solution : ship with blue ice All other available size: ship with RT , or Condition blue ice upon request.

Structure



Protocol

Cell experiment [1]:

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Cell lines Differentiated PC12 cells

Differentiated PC12 cells were pretreated with Anhydrosafflor yellow B at Preparation Method concentrations ranging from 50 to 200 μ M for 6 hours and subsequently treated with 0.5 μ M Rotenone for 24 hours.

Reaction
Conditions 50-200 μ M; pretreatment for 6 hours

Applications Anhydrosafflor yellow B at 200 μ M concentration significantly increased cell viability. Anhydrosafflor yellow B significantly suppressed the decreased cell area induced by rotenone.

Animal experiment [2]:

Animal models C57BL/6J mice

Mice were anesthetized and received intratracheal injection of LPS (10mg/kg) to Preparation Method induce acute lung injury. Anhydrosafflor yellow B was administered intraperitoneally immediately after LPS injection.

Dosage form 50 μ mol/kg; i.p.; single administered immediately after LPS injection

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Applications

Anhydrosafflor yellow B alleviated LPS-induced lung histopathologic changes, suppressed inflammatory cytokine (TNF- α and IL-6) production in plasma and bronchoalveolar lavage fluid, protected lung permeability (reduced wet-to-dry weight ratio and total protein concentration in bronchoalveolar lavage fluid), blocked inflammatory cell infiltration (reduced total cells and neutrophils in bronchoalveolar lavage fluid), inhibited neutrophil extracellular trap formation in lungs, decreased neutrophil extracellular trap levels in plasma, and suppressed the Raf/MEK/ERK signaling pathway in lung tissue.

References:

- [1] Ren R, Shi C, Cao J, et al. Neuroprotective Effects of A Standardized Flavonoid Extract of Safflower Against Neurotoxin-Induced Cellular and Animal Models of Parkinson's Disease. *Sci Rep*. 2016 Feb 24;6:22135.
- [2] Wang YP, Guo Y, Wen PS, et al. Three Ingredients of Safflower Alleviate Acute Lung Injury and Inhibit NET Release Induced by Lipopolysaccharide. *Mediators Inflamm*. 2020 Feb 29;2020:2720369.

Background

Anhydrosafflor yellow B is a quinolone C-glycoside isolated from safflower (*Carthamus tinctorius*). Anhydrosafflor yellow B inhibits ADP-induced platelet aggregation and possesses antioxidant and neuroprotective effects. Anhydrosafflor yellow B can be used in neuroscience and neurological disease research^[1-4].

In vitro, Anhydrosafflor yellow B (100–200 μ M) pretreated a neuron-astrocyte co-culture system for 2 hours, followed by stimulation with 6-OHDA (10 μ M) for 24 hours. Anhydrosafflor yellow B significantly reduced neuronal apoptosis rate, increased cell survival rate, and decreased IL-1 β and IL-10 levels^[5]. Anhydrosafflor yellow B (50–200 μ M) pretreated differentiated PC12 cells for 6 hours, followed by stimulation with Rotenone (0.5 μ M) for 24 hours. Anhydrosafflor yellow B significantly increased cell viability and suppressed the decreased cell area induced by Rotenone^[6].

In vivo, Anhydrosafflor yellow B (50 μ mol/kg; single injection) was intraperitoneally administered to

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C57BL/6J mice with acute lung injury model. Anhydrosafflor yellow B alleviated lung histopathological changes in mice, inhibited the production of tumor necrosis factor- α and interleukin-6, reduced the lung wet-to-dry weight ratio and protein concentration in bronchoalveolar lavage fluid, decreased the number of total cells and neutrophils in bronchoalveolar lavage fluid, and suppressed the co-localization of myeloperoxidase and histone as well as the formation of myeloperoxidase-DNA complexes^[7]. Anhydrosafflor yellow B (2, 4, 8mg/kg; once daily) was intravenously injected via the tail vein to Sprague-Dawley rats with middle cerebral artery occlusion/reperfusion model for 4 consecutive days. Anhydrosafflor yellow B effectively reduced infarct volume, improved neurological function, inhibited apoptosis, and decreased oxidative stress response^[8].

References:

- [1] Chen G, Li C, Zhang L, et al. Hydroxysafflor yellow A and anhydrosafflor yellow B alleviate ferroptosis and parthanatos in PC12 cells injured by OGD/R. *Free Radic Biol Med*. 2022 Feb 1;179:1-10.
- [2] Ablat N, Liu R, Ablimit M, et al. Preventive effects of a standardized flavonoid extract of safflower in rotenone-induced Parkinson's disease rat model. *Neuropharmacology*. 2022 Oct 1;217:109209.
- [3] Zhou J, Zhou C, Chen Q, et al. Integrating in silico and experimental approaches to uncover the anti-apoptotic effects of anhydrosafflor yellow B via JNK/Bid pathway in ischemic stroke. *Brain Res*. 2025 Nov 15;1867:149947.
- [4] Yue S, Wu L, Wang J, et al. Metabolic profile of anhydrosafflor yellow B in rats by ultra-fast liquid chromatography/quadrupole time-of-flight mass spectrometry. *J Chromatogr B Analyt Technol Biomed Life Sci*. 2016 Mar 1;1014:37-44.
- [5] Lei H, Ren R, Sun Y, et al. Neuroprotective Effects of Safflower Flavonoid Extract in 6-Hydroxydopamine-Induced Model of Parkinson's Disease May Be Related to its Anti-Inflammatory Action. *Molecules*. 2020 Nov 9;25(21):5206.
- [6] Ren R, Shi C, Cao J, et al. Neuroprotective Effects of A Standardized Flavonoid Extract of Safflower Against Neurotoxin-Induced Cellular and Animal Models of Parkinson's Disease. *Sci Rep*. 2016 Feb 24;6:22135.
- [7] Wang YP, Guo Y, Wen PS, et al. Three Ingredients of Safflower Alleviate Acute Lung Injury and Inhibit NET Release Induced by Lipopolysaccharide. *Mediators Inflamm*. 2020 Feb 29;2020:2720369.
- [8] Fangma Y, Zhou H, Shao C, et al. Hydroxysafflor Yellow A and Anhydrosafflor Yellow B Protect Against Cerebral Ischemia/Reperfusion Injury by Attenuating Oxidative Stress and Apoptosis via the Silent Information Regulator 1 Signaling Pathway. *Front Pharmacol*. 2021 Sep 30;12:739864.

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