Web: www.taiclone.com
Tel: +886-2-2735-9682
Email: order@taiclone.com

1,8-Dihydroxyanthraquinone

Catalog No: tcsc4392

Available Sizes

Size: 100mg

Specifications

Application:
Used as a stimulant laxative, though due to its carcinogenic properties, is not widely prescribed.

Research Area:
Cancer

CAS No:
117-10-2

Formula:
$C_{14}H_8O_4$

Pathway:
Epigenetics;PI3K/Akt/mTOR

Target:
AMPK;AMPK

Purity / Grade:
>98%

Solubility:
DMSO : ≥ 42 mg/mL (174.85 mM)

Alternative Names:
1,8-Dihydroxy-9,10-anthracenedione; 1,8-Dihydroxy-9,10-anthracenedione; 1,8-Dihydroxy-9,10-anthraquinone; Altan; Antrapurol; Chrysazin; Danthron; Danthrone; Dantron; Diaquone; Dionone; Dorbane; Istin; Istizin; Laxanorm; Laxanthreen; Laxipur; Laxipurin; Modane; NSC 38626; NSC 646568; NSC 7210; Zwitsalax

Observed Molecular Weight:
240.21

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Notes

Category for Standards; Pharmaceutical/API Drug Impurities/Metabolites

Product Description

Danthron is a natural product extracted from the traditional Chinese medicine *rhubarb*. Danthron functions in regulating glucose and lipid metabolism by activating **AMPK**.

IC50 & Target: AMPK[1]

In Vitro: Danthron (0.1, 1, and 10 μM) dose-dependently promotes the phosphorylation of AMPK and acetyl-CoA carboxylase (ACC) in both HepG2 and C2C12 cells. Meanwhile, Danthron treatment significantly reduces the lipid synthesis related sterol regulatory element-binding protein 1c (SREBP1c) and fatty acid synthetase (FAS) gene expressions, and the total cholesterol (TC) and triglyceride (TG) levels. In addition, Danthron treatment efficiently increases glucose consumption. Danthron effectively reduces intracellular lipid contents and enhances glucose consumption in vitro via activation of AMPK signaling pathway. 10 μM Danthron/24 h is safe for HepG2 cells. With 80% confluence, HepG2 cells are incubated with Danthron (0.1-10 μM) in FBS-Free media for 8 h. Subsequently, cells are harvested for Western blot assay. Danthron increases the p-AMPK protein in a dose-dependent manner, and no changes in t-AMPK protein are observed[1]. Danthron inhibits 9-cis retinoic acid (9cRA)-induced retinoic X receptor α (RXRα) transactivation by IC_{50} at 0.11 μM. To further clarify the stoichimetric ratio of Danthron binding to RXRα-ligand-binding domain (LBD), isothermal titration calorimetry (ITC) experiment is performed. The K_D value of Danthron binds to RXRα-LBD by ITC experiment is determined at 7.5 μM[2].

In Vivo: Danthron functions as an insulin sensitizer in vivo. Danthron improves insulin sensitivity in diet-induced obese (DIO) mice. The insulin tolerance test result shows that Danthron (5 mg/kg) treated diet-induced obesity mice exhibit lower glucose levels after insulin challenge, compared with the control vehicle-treated group[2].