

# 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 :  $\geq 42$  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

## Notes

Category for Standards; Pharmaceutical/API Drug Impurities/Metabolites

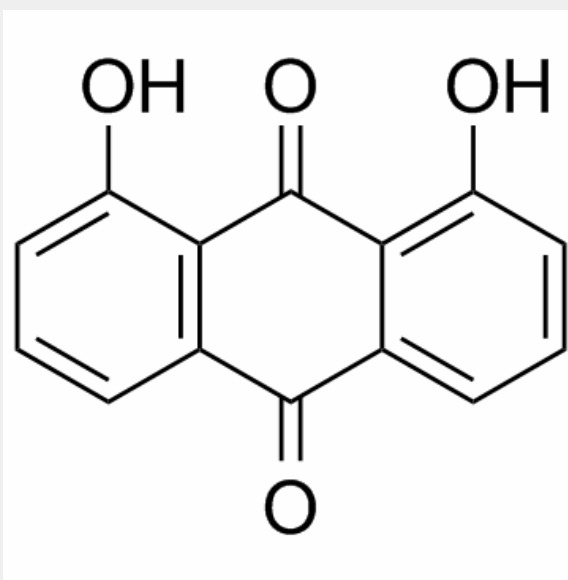
## Product Description

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

IC<sub>50</sub> & Target: AMPK<sup>[1]</sup>

**In Vitro:** Danthron (0.1, 1, and 10  $\mu$ M) 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  $\mu$ M Danthron/24 h is safe for HepG2 cells. With 80% confluence, HepG2 cells are incubated with Danthron (0.1-10  $\mu$ M) 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<sup>[1]</sup>. Danthron inhibits 9-cis retinoic acid (9cRA)-induced retinoic X receptor  $\alpha$  (RXR $\alpha$ ) transactivation by IC<sub>50</sub> at 0.11  $\mu$ M. To further clarify the stoichiometric ratio of Danthron binding to RXR $\alpha$ -ligand-binding domain (LBD), isothermal titration calorimetry (ITC) experiment is performed. The K<sub>D</sub> value of Danthron binds to RXR $\alpha$ -LBD by ITC experiment is determined at 7.5  $\mu$ M<sup>[2]</sup>.

**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<sup>[2]</sup>.



All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!