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

Cryptotanshinone

Catalog No: tcsc3276

Available Sizes

Size: 10mg

Size: 50mg

Specifications

CAS No:
35825-57-1

Formula:
$C_{19}H_{20}O_3$

Pathway:
Autophagy;JAK/STAT Signaling;Stem Cell/Wnt

Target:
Autophagy;STAT;STAT

Purity / Grade:
>98%

Solubility:
DMSO : 8.33 mg/mL (28.11 mM; Need ultrasonic)

Alternative Names:
Cryptotanshinon;Tanshinone c

Observed Molecular Weight:
296.36

Product Description

Cryptotanshinone is a potent **STAT3** inhibitor with **IC_{50}** of 4.6 μM, and inhibits STAT3 Tyr705 phosphorylation in DU145 prostate cancer cells.

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In Vitro: Cryptotanshinone significantly inhibits STAT3-dependent luciferase activity, the STAT3 Tyr705 phosphorylation and the dimerization of STAT3, compared to tanshinone IIA which exhibits no activity. Cryptotanshinone (7 μM) dramatically blocks STAT3 Tyr705 phosphorylation but not STAT3 Ser727 phosphorylation in DU145 cells, and significantly inhibits JAK2 phosphorylation with IC_{50} of appr 5 μM without affecting the phosphorylation of upstream kinases c-Src and EGFR, suggesting the inhibition of STAT3 Tyr705 phosphorylation might due to a direct mechanism probably by binding to the SH2 domain of STAT3. Cryptotanshinone significantly inhibits the proliferation of DU145 prostate cancer cells harboring constitutively active STAT3 with GI_{50} of 7 μM by blocking STAT3 activity, which leads to the down-regulation of cyclin D1, Bcl-xL, and survivin, subsequently the accumulation in the G0-G1 phase. Cryptotanshinone exhibits less growth inhibitory effect on PC3, LNCaP and MDA-MB-468 cells[1]. Cryptotanshinone significantly attenuates the in vitro hormonal effects of DEX on ovaries, as indicated by a significant decrease in T and an increase in P levels in the culture medium. Cryptotanshinone significantly increases the levels of phosphorylated AKT2 and GSK3β in the DEX-treated ovaries[2]. Cotreatment with imatinib and Cryptotanshinone shows a significant synergistic killing effect in both imatinib sensitive and resistant CML cell lines, as well as primary CML cells[3].

In Vivo: Cryptotanshinone reverses the ovarian IR and significantly increases 2-deoxy-D-[1,2-^{3}H]-glucose uptake in all examined tissues from the DEX-treated mice. Cryptotanshinone significantly reduces the ovulation rate and plasma E2 and P levels[2]. Cryptotanshinone administration significantly reduces the body weight and food intake of ob/ob mice (C57BL/6J-Lepob) and diet-induced obese (DIO) mice in a dose-dependent manner. Cryptotanshinone causes noticeably less fat in the adipose tissues, significant reductions of serum triglycerides and cholesterol levels, and 2.5- to 3-fold higher AMPK activity of the skeletal muscles than in the control mice. Oral administration of Cryptotanshinone at 600 mg/kg/day produces dramatic reductions in blood glucose levels of ob/ob mice (C57BL/6J-Lepob), db/db mice (C57BL/KsJ-Leprdb), and ZDF rats, which occur after 3 days and persist over the entirety of the monitoring period[4].