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Print Date: Jan 15th 2016

Certificate of Analysis

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Product Name: **Cryptotanshinone** **Catalog No.: 3713** **Batch No.: 1**

CAS Number: 35825-57-1

IUPAC Name: 1,2,6,7,8,9-Hexahydro-1,6,6-trimethyl[1,2-*b*]furan-10,11-dione

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{19}H_{20}O_3.¼H_2O$

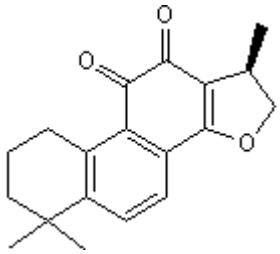
Batch Molecular Weight: 300.86

Physical Appearance: Orange solid

Solubility: DMSO to 10 mM

Storage: Store at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

TLC: R_f = 0.32 (Dichloromethane)

HPLC: Shows 98.9% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Optical Rotation: $[\alpha]_D$ = -83 (Concentration = 1, Solvent = Chloroform)

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	75.85	6.87	
Found	76.12	7.03	

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

Major tanshinone isolated from Salvia miltiorrhiza that exhibits multiple activities. Exhibits antitumor activity via inhibition STAT3 activity (IC_{50} = 4.6 μM). Displays antibacterial and anti-inflammatory activity and acts as an antidiabetes and antiobesity agent via activation of AMP-activated protein kinase (AMPK). Also improves cognitive impairment in Alzheimer's disease transgenic mice by inhibition of acetylcholinesterase (IC_{50} = 4.09 μM) and reduction in Aβ peptide generation.

Physical and Chemical Properties:

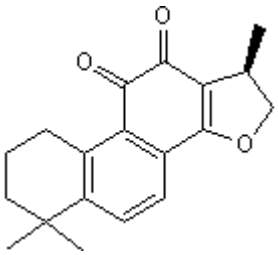
Batch Molecular Formula: $C_{19}H_{20}O_3.¼H_2O$

Batch Molecular Weight: 300.86

Physical Appearance: Orange solid

Minimum Purity: >98%

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

DMSO to 10 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

References:

Kim *et al* (2007) Antidiabetes and antiobesity effect of cryptotanshinone via activation of AMP-activated protein kinase. Mol.Pharmacol. ***72*** 62. PMID: 17429005.

Shin *et al* (2009) Cryptotanshinone inhibits constitutive signal transducer and activator of transcription 3 function through blocking the dimerization in DU145 prostate cancer cells. Cancer Res. ***69*** 193. PMID: 19118003.

Zhang *et al* (2009) Cryptotanshinone, a compound from *Saliva miltiorrhiza* modulates amyloid precursor protein metabolism and attenuates β-amyloid deposition through upregulating α-secretase *in vivo* and *in vitro*. Neurosci.Letts. ***452*** 90.

Wong *et al* (2009) Cryptotanshinone, an acetylcholinesterase inhibitor from *Salivia miltiorrhiza*, ameliorates scopolamine-induced amnesia in morris water maze task. Planta Med. ***76*** 288.

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