TOCRIS
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Print Date: Jan 8th 2016

Certificate of Analysis

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Product Name: **Costunolide** **Catalog No.: 2483** **Batch No.: 10**

CAS Number: 553-21-9

IUPAC Name: (3a*S*,6*E*,10*E*,11a*R*)-3a,4,5,8,9,11a-Hexahydro-6,10-dimethyl-3-methylene-cyclodeca[*b*]furan-2(3*H*)-one

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $C_{15}H_{20}O_2$

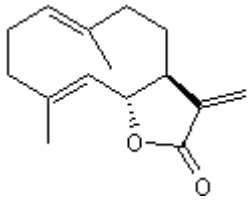
Batch Molecular Weight: 232.32

Physical Appearance: Off White solid

Solubility: DMSO to 50 mM
ethanol to 50 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 98.7% purity

^{1}H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	77.55	8.68	
Found	77.48	8.66	

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

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Description:

Inhibitor of human telomerase activity (IC_{50} = 65 µM in MCF-7 breast cancer cells). Suppresses proliferation and induces apoptosis in a variety of human tumor cell lines. Selectively blocks endothelial cell proliferation induced by VEGF. Inhibits expression of iNOS and IL-1β and disrupts NF-κB activation. Displays anti-inflammatory, antifungal and antiviral properties.

Physical and Chemical Properties:

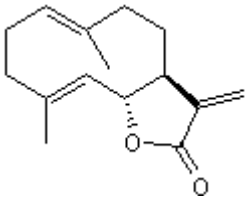
Batch Molecular Formula: $C_{15}H_{20}O_2$

Batch Molecular Weight: 232.32

Physical Appearance: Off White solid

Minimum Purity: >97%

Batch Molecular Structure:



Storage: Store at -20°C

CAUTION - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

Solubility & Usage Info:

DMSO to 50 mM
ethanol to 50 mM

When purchsed as a 1mg unit, this product is supplied as a lyophilized solid and may be very hard to visualize. Solutions should be made by adding solvent directly to the vial. The vial should then be vortexed vigorously to ensure the product has completely dissolved.

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:

Park *et al* (1996) Syringin 4-*O*-β-glucoside, a new phenylpropanoid glycoside, and costunolide, a nitric oxide synthase inhibitor, from the stem bark of *Magnolia sieboldi*. J.Nat.Prod. ***59*** 1128. PMID: 8988596.

Jeong *et al* (2002) Costunolide, a sesquiterpene lactone from *Saussurea lappa*, inhibits the VEGFR KDR/Flk-1 signaling pathway. Cancer Lett. ***187*** 129. PMID: 12359360.

Choi *et al* (2005) Inhibitory effects of costunolide on the telomerase activity in human breast carcinoma cells. Cancer Lett. ***227*** 153. PMID: 16112418.

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