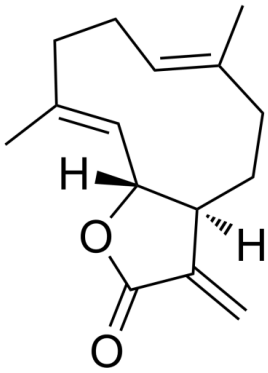
Data Sheet

Product Name:	Costunolide
Cat. No.:	CS-1487
CAS No.:	553-21-9
Molecular Formula:	$C_{15}H_{20}O_2$
Molecular Weight:	232.32
Target:	Apoptosis; Endogenous Metabolite
Pathway:	Apoptosis; Metabolic Enzyme/Protease
Solubility:	Ethanol : 25 mg/mL (107.61 mM; ultrasonic and warming and heat to 60°C); DMSO : ≥ 49 mg/mL (210.92 mM)



BIOLOGICAL ACTIVITY:

Costunolide ((+)-Costunolide) is a naturally occurring sesquiterpene lactone, with antioxidative, anti-inflammatory, antiallergic, bone remodeling, neuroprotective, hair growth promoting, anticancer, and antidiabetic properties. Costunolide can induce cell cycle arrest and **apoptosis** on breast cancer cells[1][2][3]. IC50 & Target: Apoptosis[2][3] ***In Vitro:*** Costunolide inhibits the colony formation, migrative and invasive abilities of the H1299 cells in a dose or time dependent manner[2].

Costunolide (6.7-215.2 μM; 24 hours) inhibits the viability of H1299 cells in a dose-dependent manner, with an IC_{50} of 23.93 μM[2].

Costunolide (12.0-48.0 μM; 48 hours) induces apoptosis in H1299 cells[2].

Costunolide (12-48.0 μM; 6-12 hours) regulates metastasis- and proliferation-associated mRNA expression[2].

Costunolide regulates epithelial-to-mesenchymal transition (EMT)-associated protein expression[2].

Costunolide regulates c-Myc mediated apoptosis signaling and 14-3-3-mediated signaling pathways in breast cancer cells[3].

In Vivo: Costunolide (20 mg/kg; i.p; daily; for 30 days) inhibits breast cancer through c-Myc/p53 and AKT/14-3-3 pathway[3].

References:

[1]. Dae Yong Kim, et al. Costunolide-A Bioactive Sesquiterpene Lactone with Diverse Therapeutic Potential. Int J Mol Sci. 2019 Jun; 20(12): 2926.

[2]. Minyan Wei, et al. Costunolide induces apoptosis and inhibits migration and invasion in H1299 lung cancer cells. Oncol Rep. 2020 Jun;43(6):1986-1994.

[3]. Zhangxiao Peng, et al. Costunolide and dehydrocostuslactone combination treatment inhibit breast cancer by inducing cell cycle arrest and apoptosis through c-Myc/p53 and AKT/14-3-3 pathway.Sci Rep. 2017; 7: 41254.

CAIndexNames:

Cyclodeca[b]furan-2(3H)-one, 3a,4,5,8,9,11a-hexahydro-6,10-dimethyl-3-methylene-, (3aS,6E,10E,11aR)-

SMILES:

O=C(O[C@@]1([H])[C@@]2([H])CC/C(C)=C/CC/C(C)=C/1)C2=C

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 610-426-3128 Fax: 888-484-5008 E-mail: sales@ChemScene.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA