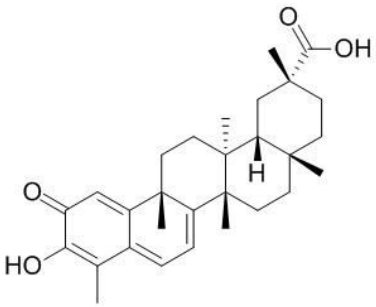
Natural Products

ChemFaces

Celastrol Datasheet

4th Edition (Revised in July, 2016)

[Product Information]



Name: Celastrol

Catalog No.: CFN99198

Cas No.: 34157-83-0

Purity: 98%

M.F: $C_{29}H_{38}O_4$

M.W: 450.61

Physical Description: Red powder

Synonyms:10-Hydroxy-2,4a,6a,9,12b,14a-hexamethyl-11-oxo-1,2,3,4,4a,5,6,6a,11,12b,13,14,14a,14b-tetradecahydro-picene-2-carboxylic acid, Tripterin .

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Food and cosmetic research;
4. Synthetic precursor compounds;
5. Intermediates & Fine Chemicals
6. Others.

[Source]

The herb of *Tripterygium wilfordii Hook. f.*

[Biological Activity or Inhibitors]

Celastrol, an active compound extracted from the root bark of the Chinese medicine *"Thunder of God Vine" (Tripterygium wilfordii Hook F.)*, was used for years as a natural remedy for inflammatory conditions; it is a potent proteasome inhibitor, shows in vivo inhibition of the proteasomal activity and induction of apoptosis and suppresses human prostate cancer growth in nude mice; suggests that celastrol is a natural proteasome inhibitor that has a great potential for cancer prevention and treatment.[1]

Celastrol, a quinone methide triterpenoid, was isolated as an inhibitor of NF-kappaB from Celastrus orbiculatus, it dose-dependently inhibits a variety of stimuli-induced NF-kappa B-regulated gene expression and the DNA-binding of NF-kappa B in different cell lines without affecting DNA-binding activity of AP-1; celastrol significantly suppresses the production of NO and TNF-alpha in LPS-stimulated RAW264.7 cells, and increases the cytotoxicity of TNF-alpha in HT-1080 cells; suggests that celastrol shows anti-inflammatory and anti-tumor activities in animal models. [2]

Celastrol can activate heat shock gene transcription synergistically with other stresses and exhibits cytoprotection against subsequent exposures to other forms of lethal cell stress, suggests that celastrols exhibit promise as a new class of pharmacologically active regulators of the heat shock response.[3]

Celastrol, a novel HSP90 inhibitor, can deplete Bcr–Abl and induce apoptosis in imatinib-resistant chronic myelogenous leukemia cells harboring T315I mutation.[4]

Celastrol has antioxidant and anti-inflammatory activities and has effects on cognitive functions, suggest that the drug may be useful to treat accompanied by inflammation, such as Alzheimer's disease (AD) .[5]

Celastrol has potential to be used as an antiangiogenesis drug through its role in suppressing VEGF receptors expression that might consequently reduce the signal transduction between VEGF and VEGFR.[6]

[Solvent]

DMSO, Methanol.

[HPLC Method][7]

Mobile phase: Acetonitrile-0.2% Formic acid H2O=80:20;

Flow rate: 1.0 ml/min;

Column temperature: 40 ℃;

The wave length of determination: 425 nm.

[Storage]

2-8℃, Protected from air and light, refrigerate or freeze.

[References]

[1] Yang H, Chen D, Cui Q C, *et al. Cancer Res., 2006, 66(9):4758-65.*

[2] Lee J H, Koo T H, Yoon H, *et al. Biochem. Pharmacol., 2006, 72(10):1311-21.*

[3] Westerheide S D, Bosman J D, Mbadugha B N, *et al. J. Biol. Chem., 2004, 279(53): 56053-60.*

[4] Lu Z, Jin Y, Qiu L, *et al. Cancer Lett., 2010, 290(2):182-91.*

[5] Allison A C, Cacabelos R, Lombardi V R, *et al. Prog. Neuro-Psychoph., 2001, 25(7): 1341-57.*

[6] Huang Y, Zhou Y, Fan Y, *et al. Cancer Lett., 2008, 264(1):101-6.*

[7] Liu P, Chen Y. *China Pharmacy, 2015(1):62-5.*

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