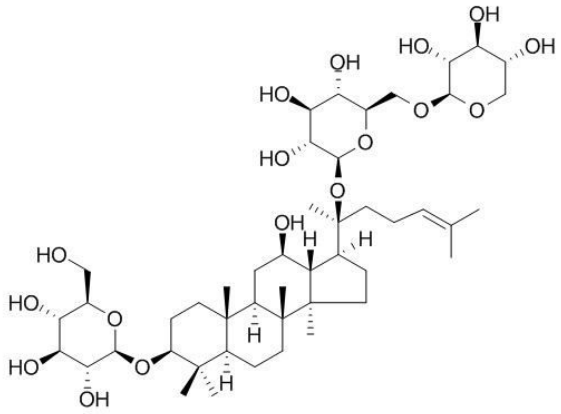
Natural Products

ChemFaces

Stevenleaf Datasheet

4th Edition (Revised in July, 2016)

[Product Information]



Name: Stevenleaf

Catalog No.: CFN99189

Cas No.: 80321-63-7

Purity: > 98%

M.F: $C_{47}H_{80}O_{17}$

M.W: 768.99

Physical Description: White powder

Synonyms: Gypenoside IX; Gypenoside XIII;Gypenoside XVI; beta-D-Glucopyranoside,(3alpha,12beta)-3-(beta-D-glucopyranosyloxy)-12-hydroxydammar-24-en-20-yl 6-O-beta-D-xylopyranosyl-.

[Intended Use]

1. Reference standards;
2. Pharmacological research;
3. Food research;
4. Cosmetic research;
5. Synthetic precursor compounds;
6. Intermediates & Fine Chemicals;
7. Ingredient in supplements, beverages;
8. Others.

[Source]

The herb of *Gynostemma pentaphyllum (Thunb.) Makino.*

[Biological Activity or Inhibitors]

Gypenosides (Gyp, Stevenleaf) are triterpenoid saponins contained in an extract from Gynostemma pentaphyllum Makino, they induce apoptosis in human hepatoma cells through the up-regulation of Bax and Bak, and down-regulation of Bcl-2, release of mitochondrial cytochrome c and activation of caspase cascade.[1]

Gypenosides induce ER stress and production of reactive oxygen species and Ca 2+ , change the ratio of Bcl-2 and Bax, followed by the dysfunction of mitochondria, cause cytochrome c release, activation of caspase-3 before leading to apoptosis, these results provide information towards an understanding of the mechanisms by which Gyp induces cell cycle arrest and apoptosis in human tongue cancer cells.[2]

Gypenosides can inhibit invasion and migration of human tongue SCC4 cells by down-regulating proteins associated with these processes, resulting in reduced metastasis.[3]

Gypenosides can protect cortical cells by multiple antioxidative actions via enhancing intracellular GSH, suppressing glutamate-induced cytosolic Ca 2+ elevation and blocking glutamate-induced apoptosis, GPs imply their remarkable preventative and therapeutic potential in treatment of neurological diseases involving glutamate and oxidative stress.[4]

Gypenosides protect biomembranes from oxidative injury by reversing the decreased membrane fluidity of liver microsomes and mitochondria, increasing mitochondrial enzyme activity in vascular endothelial cells and decreasing intracellular lactate dehydrogenase leakage from these cells; the extensive antioxidant effect of GPs may be valuable to the prevention and treatment of various diseases such as atherosclerosis, liver disease and inflammation.[5]

[Solvent]

Pyridine, Methanol, Ethanol, Hot water, etc.

[HPLC Method][6]

Mobile phase: Acetonitrile- 0.5% Phosphoric acid H2O=38:62;

Flow rate: 1.0 ml/min;

Column temperature: 30 ℃;

The wave length of determination: 210 nm.

[Storage]

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

[References]

[1] Wang Q F, Chen J C, Hsieh S J, *et al. Cancer Lett., 2002, 183(2):169-78.*

[2] Chen J C, Lu K W, Tsai M L, *et al. Oral Oncol., 2008, 45(3):273-83.*

[3] Lu K W, Tsai M L, Chen J C, *et al. Anticancer Res., 2008, 28(2A):1093-9.*

[4] Shang L, Liu J, Zhu Q, *et al. Brain Res., 2006, 1102(1):163-74.*

[5] Li L, Jiao L, Lau B H. *Cancer Biother., 1993, 8(3):263-72.*

[6] Liu C, Zhang Q, Xie E, *et al. Drug Standards of China, 2013, 14(1):7-9.*

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