

Andrographis paniculata

Emerging medicinal crop Kalmegh (*Andrographis paniculata*), commonly known as the “king of bitters” is an herbaceous plant belonging to the Acanthaceae and is found throughout tropical and subtropical Asia, Southeast Asia, and India.

Kalmegh is a plant which is also known as “Green Chiretta”. It is used for various medicinal purposes and is bitter in taste. It is mainly used for liver problems as it protects the liver against damage caused by free radicals due to its antioxidant and anti-inflammatory activity. It is being used in traditional medicine, as remedy for the cold, fever and detoxification of the body since time immemorial, one of the most important medicinal crops, indigenous to India and Sri Lanka.

Kalmegh also known as *Andrographis*, *Kalmegha*, *Kalamage*.

Chemical Constitutes

Andrographolide is a major bioactive phytoconstituent found in various parts of *A. paniculata*, but particularly in the leaves. Andrographolide is not very soluble in water, it is soluble in acetone, chloroform, ether, and hot ethanol. *Andrographis paniculata* contains diterpenes, lactones and flavonoids. Flavonoids mainly exist in the root, but have also been isolated from the leaves.

Medicinal Applications/ Ayurveda Usages

Andrographis paniculata churna (Powder) regularly helps to manage arthritis by reducing the Amla and also stimulates appetite by improving the digestive fire.

Andrographis paniculata is a good for diabetes. Andrographolide in Kalmegh helps to reduce the blood glucose levels. It helps in the release of insulin from the pancreatic cells, thus promotes the utilization of glucose. Due to its antioxidant property, Kalmegh reduces the risk of diabetic complications.

Andrographis paniculata powder along with coconut oil can be applied on the skin to manage eczema, boils and skin infections due to its antioxidant, antimicrobial and anti-inflammatory properties.

Andrographis paniculata is especially useful in managing liver-related diseases. It exhibits hepatoprotective property due to Kapha and Pitta balancing nature.

Fatty liver is a condition of accumulation of excessive fat in liver cells. This result in inflammation in the liver. Kalmegh syrup helps to manage this condition due to its Deepan (appetizer), Pachan (digestion) and Shothhar (anti-inflammatory) properties. It helps to digest excessive fat and reduce inflammation in the liver cells. This also helps to improve your digestion and enhance your appetite. It is also used in veterinary.



**Andrographis
paniculata**
(KALMEGH)

How Kalmegh extract works inside the body

The extract of *Andrographis paniculata* showed an α -glucosidase inhibitory effect in a concentration-dependent manner, suggesting a potential candidate for the management of type 2 diabetes mellitus.

Kalmegh can help reduce cholesterol. Andrographolide in Kalmegh has a hypolipidemic effect. It reduces the level of bad cholesterol (LDL) and triglycerides in blood. It prevents the deposition of cholesterol in the blood vessels. Due to its antioxidant property, it also prevents lipid peroxidation that can lead to the damage of blood vessels.

Andrographolide, andrographoside, and neoandrographolide protect liver against the hepatotoxins by reducing the levels of the lipid oxidation product, malondialdehyde (MDA), and by maintaining high levels of the reduced form of glutathione (GSH).

Andrographolide pretreatment and posttreatment were found to protect mesencephalic neurons against lipopolysaccharide (LPS) induced cellular toxicities via inhibition of pro-inflammatory cytokine and ROS production, suggesting that Andrographolide may ameliorate PD symptoms via inhibiting microglial activation.

Extract of *Andrographis paniculata* (MEAP) has a potential effect on inhibiting the progression of hepatotoxicity by significantly increasing serum LDH, ALP.

Actives of Kalmegh Extract

- Andrographolide 10% by HPLC
- Andrographolide 20% by HPLC
- Andrographolide 40% by HPLC
- Andrographolide 90% by HPLC

References

1. T.Wang, B. Liu, W. Zhang, B. Wilson, J.S. Hong, Andrographolide reduces inflammation-mediated dopaminergic neurodegeneration in mesencephalic neuron glia cultures by inhibiting microglial activation. *J. Pharmacol. Exp Ther.*, 308 (2004), pp. 975-983.
2. L. Varela-Nallar, S.B. Arredondo, C. Topio-Rojas, J. Hancke, N.C. Inestrosa, Andrographolide stimulates neurogenesis in the adult hippocampus. *Neural Plast.*, 2015 (2015), Article 935403.
3. T.Hida, N. Yamashita, H. Usui, F. Nakamura, Y. Sasaki, A. Kikuchi, Y. Goshima, GSK3 β /axin-1/ β catenin complex is involved in semaphorin3A signaling. *J. Neurosci.*, 32 (2012), pp. 11905-11918.
4. P. Perez-Domper, V. Palomo, S. Gradari, C. Gil, M.L. de Ceballos, A. Martinez, J.L. Trejo, The GSK-3 inhibitor VP2.51 produces antidepressant effects associated with adult hippocampal neurogenesis. *Neuropharmacology*, 116 (2017), pp. 174-187.
5. Gamble JS, Flora of the Presidency of Madras, 2 Botanical Survey of India, Calcutta, 1956, 1048-1052.
6. Handa SS, Sharma A, Hepatoprotective activity of andrographolide against galactosamine & paracetamol intoxication in rats, *Indian Journal of Medical Research*, 92, 1990, 284-292.
7. Sarawat B, Visen PKS, Patnaik GK, Dhawan BN, Effect of andrographolide against galactosamine induced hepatotoxicity, *Fitoterapia*, 66, 1995, 415-420.
8. Trivedi NP, Rawal UM, Patel BP, Hepatoprotective effects of andrographolide against hexachlorocyclohexane-induced oxidative injury, *Integrative Cancer Therapies*, 6, 2007, 271-280.
9. Kalaivani CS, Sathish SS, Janakiraman N, Johnson M, GC-MS studies on *Andrographis paniculata* (Burm.f.) Wall. Ex Nees - A medicinally important plant, *International Journal of Medicinal and Aromatic Plants*, 2, 2012, 69-74.
10. Jarukamjorn K, Nemoto N. Pharmacological aspects of *Andrographis paniculata* on health and its major diterpenoid constituent andrographolide. *J Health Sci.* 2008;54(4):370-381.
11. Jayakumar T, Hsieh CY, Lee JJ, et al. Experimental and clinical pharmacology of *Andrographis paniculata* and its major bioactive phytoconstituent andrographolide. *Evid Based Complement Alternat Med.* 2013;2013:846740.



Sunpure Extracts



Corporate Address: Sunpure Pvt Ltd
Sunpure House,
L-99 A, Dilshad Garden, Delhi- 110095, INDIA



Ph: +91-11-22126629, +91-9205515570



Email: info@sunpure.co.in, sales@sunpure.co.in



Web: <https://www.sunpure.co.in>



Manufacturing Base:
E-25, Gopalpur Industrial Area, Sikandrabad,
Uttar Pradesh - 203205, INDIA

