

Monograph Studies on Tinospora Cordifolia

**Prathamesh Dinkar Dhokale, Mansvi Avinash Dhokale, Sayali Santosh Jadhav,
Mrugasha Gurunath Desale, Dhomase Omkar Bhaskar, Bhalekar Sachin Mahadu**

Samarth Institute of Pharmacy, Belhe, Pune, Maharashtra, India

Abstract: *Tinospora cordifolia* is a deciduous woody climbing shrub distributed throughout India, China, Africa. It belongs to the family Menispermaceae. The pharmaceutical significance of this plant is mainly because of root, stem, leaf. It constitutes various phytoactive compounds such as alkaloids, steroids, glycosides, lactones, polysaccharides and so on. Almost all parts of the plant constitute immunomodulatory properties. It is one of the important medicinal plants used in Ayurvedic medicine for the treatment of cold, fever, diabetes, and even rheumatoid arthritis. This paper presents a review on botanical description, medicinal properties and pharmaceutical importance of *Tinospora cordifolia*.

Keywords: *Tinospora cordifolia*, Medicinal plant, Immunomodulatory, Botanical description, Medicinal properties

REFERENCES

- [1]. MM. Pandey, S. Rastogi, AK. Rawat, “ Indian herbal drug for general healthcare: An overview”, Internet Journal of Alternative Medicine, 2008.
- [2]. AV. Raghu, S.P. Geetha, G. Martin, I. Balachandran, PN. Ravindran, “In vitro clonal propagation through mature nodes of *Tinospora cordifolia* (Willd.) Hook. F. & Thoms.: An important ayurvedic medicinal plant”, In Vitro Cellular & Developmental Biology-Plant, 42 (6), 584-588, 2006.
- [3]. Tirtha SS, “The Ayurveda Encyclopedia-Natural Secrets to Healing, Prevention and Longevity”, 2007.
- [4]. CP. Khare, Indian Medicinal Plants- An illustrated Dictionary, Springer Science and Business Media, 710, 2007.
- [5]. K. Sinha, NP. Mishra, J.Singh, SPS. Khanuja, “*Tinospora cordifolia*(Guduchi), a reservoir plant for therapeutic application”, Indian Journal of Traditional Knowledge, 3(3), 257-270, 2004.
- [6]. Abhimanyu Sharma, Asmita Gupta, Sakshi Singh Amlabatra, “*Tinospora cordifolia*(Willd.) Hook. F. & Thomson - A plant with immense economic potential”, Journal of Chemical and Pharmaceutical Research, 2(5), 327-333, 2010.
- [7]. S. Chaudhari, N. Shaikh, “Gaduchi-the best ayurvedic herb”, The Pharma Innovation Journal, 2(4), 97-102, 2013.
- [8]. U. Spandana, S.L. Ali, T. Nirmala, M. Santhi, S.D. SipaiBabu , “A Review on *Tinosporacordifolia*”, International Journal of Current Pharmaceutical Review and Research, 4(2), 61-68, 2013.
- [9]. KN. Aiyer, M. Kolammal, Pharmacognosy of Ayurvedic Drugs, Series 1. 1st ed Trivendram, The central Research institute, 1963.
- [10]. B. Bishayi, S. Roychowdhury, S. Ghosh, M. Sengupta, “Hepatoprotective and immunomodulatory properties of *Tinospora cordifolia* in ccl4 intoxicated mature albino rats”, The Journal of Toxicological Sciences, 27 (3), 139-146, 2002.
- [11]. KR. Kirtikar and BD. Basu, Indian Medicinal Plants. Second Edition, International Book Distributors, Dehradun, 2005.
- [12]. S. Nasreen, R. Radha, N. Jayshree, B. Selvaraj, A. Rajendran, “Assessment of quality of *Tinospora cordifolia* (willd) miers pharmacognostical and phyto-physicochemical profile”, International Journal of Comprehensive Pharmacy, 1(5), 1-4, 2010.



- [13]. K. Raghunathan, KC. Cluneker, PV. Sharma, "Pharmacognostical studies on GuduchiTinospora cordifolia (Miers)", *J Res Indian Med.*, 6:201, 1969.
- [14]. Database on Medicinal Plants Used in Ayurveda, Vol. 3, CCRAS, Reprint, New Delhi, 2005.
- [15]. S.S. Singh, S.C. Pandey, S. Srivastava, V.S. Gupta, B. Patro, A.C. Ghosh, "Chemistry and medicinal properties of Tinospora cordifolia (Guduchi)", *Indian Journal of Pharmacology*, 35, 83-91, 2003.
- [16]. Tripathi YB, Sharma M, Manickam M. Rubia 5 din, a new antioxidant from rubia cordifolia. *Indian J Biochem Biophys.* 1997;34:302-6.
- [17]. Subramanian M, Chintalwar GJ, Chattopadhyay S. Antioxidant properties of a Tinospora cordifolia polysaccharide against iron-mediated lipid damage and gamma-ray induced protein damage. *Redox Rep.* 2002;7:137-43.
- [18]. Sharma U, Bala M, Kumar N, Singh B, Munshi RK, Bhalerao S. Immunomodulatory active compounds from Tinospora cordifolia. *J Ethnopharmacol.* 2012;141:918-26.
- [19]. Kapil A, Sharma S. Immunopotentiating compounds from Tinospora cordifolia. *J Ethnopharmacol.* 1997;58:89-95.
- [20]. More P, Pai K. In vitro NADH-oxidase, NADPH-oxidase and myeloperoxidase activity of macrophages after Tinospora cordifolia (guduchi) treatment. *Immunopharmacol Immunotoxicol.* 2012;34:368-72.
- [21]. Upadhyaya R, PR, Sharma V, Anita KV. Assessment of the multifaceted immunomodulatory potential of the aqueous extract of Tinospora cordifolia. *Res J Chem Sci.* 2011;1:71-9.
- [22]. Sudhakaran DS, Srilekha P, Devasree LD, Prem Singh S, Michael RD. Immunostimulatory effect of Tinospora cordifolia Miers leaf extract in Oreochromis mossambicus. *Indian J Exp Biol.* 2006;44:726-32.
- [23]. Sangeetha MK, Raghavendran Balaji HR, Gayathri V, Vasanthi HR. Tinospora cordifolia attenuates oxidative stress and distorted carbohydrate metabolism in experimentally induced type 2 diabetes in rats. *J Nat Med.*
- [24]. P S, Zinjarde SS, Bhargava SY, Kumar AR. Potent α -amylase inhibitory activity of Indian Ayurvedic medicinal plants. *BMC Complement Altern Med.* 2011;11:5.
- [25]. Gupta R, Sharma V. Ameliorative effects of Tinospora cordifolia root extract on histopathological and biochemical changes induced by aflatoxin-b (1) in mice kidney. *Toxicol Int.* 2011;18:94-8.
- [26]. Sharma V, Pandey D. Beneficial effects of Tinospora cordifolia on blood profiles in male mice exposed to lead. *Toxicol Int.* 2010;17:8-11.
- [27]. Sharma P, Parmar J, Sharma P, Verma P, Goyal PK. Radiation-Induced Testicular Injury and Its Amelioration by Tinospora cordifolia (An Indian Medicinal Plant) Extract. *Evid Based Complement Alternat Med.*
- [28]. Rao SK, Rao PS. Alteration in the radiosensitivity of HeLa cells by dichloromethane extract of guduchi (Tinospora cordifolia) *Integr Cancer Ther.* 2010;9:378-84.
- [29]. Kapur P, Pereira BM, Wuttke W, Jarry H. Androgenic action of Tinospora cordifolia ethanolic extract in prostate cancer cell line LNCaP. *Phytomedicine.* 2009;16:679-82.
- [30]. Prince Stanely Mainzen P, Menon VP. Hypoglycaemic and hypolipidaemic action of alcohol extract of Tinospora cordifolia roots in chemical induced diabetes in rats. *Phytother Res.* 2003;17:410-3.
- [31]. Sivakumar V, Rajan MS. Antioxidant Effect of Tinospora cordifolia Extract in Alloxan-induced Diabetic Rats. *Indian J Pharm Sci.* 2010;72:795-8.
- [32]. Prince Stanely Mainzen P, Menon VP. Antioxidant action of Tinospora cordifolia root extract in alloxan diabetic rats. *Phytother Res.* 2001;15:213-8.
- [33]. Gacche RN, Dhole NA. Profile of aldose reductase inhibition, anti-cataract and free radical scavenging activity of selected medicinal plants: An attempt to standardize the botanicals for amelioration of diabetes complications. *Food Chem Toxicol.* 2011;49:1806-13.



IJARSCT

Impact Factor: 6.252

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

IJARSCT

ISSN (Online) 2581-9429

Volume 2, Issue 1, December 2022

- [34]. Rawal A, Muddeshwar M, Biswas S. Effect of rubia cordifolia, Fagonia cretica linn, and Tinospora cordifolia on free radical generation and lipid peroxidation during oxygen-glucose deprivation in rat hippocampal slices. Biochem Biophys Res Commun. 2004;324:588–96.