

## COMPARATIVE EFFECTIVENESS OF *TINOSPORA CORDIFOLIA* LEAVES AND STEMS AGAINST THREE DIFFERENT BACTERIAL STRAINS

Manish Thakur<sup>1</sup> and Tejinder Kaur\*

<sup>1</sup>Department of Microbiology, D.A.V. University, Jalandhar, Punjab, India

Department of Zoology, D.A.V. University, Jalandhar, Punjab, India

Email: [tejinder10034@davuniversity.org](mailto:tejinder10034@davuniversity.org)

Received-04.09.2021, Revised-16.09.2021, Accepted-26.09.2021

**Abstract:** Antibiotic resistance is prevalent in today's world, with harmful bacteria becoming resistant to a broad range of antibacterial agents. As a result, there is an urgent need in today's society to discover a natural antibiotic. In herbal medicine, plant species with medicinal value are used to treat a variety of illnesses that are caused by microbial infections. Using the stem and leaves of *Tinospora cordifolia*, the researchers in this study evaluated the antibacterial activity of the two plant parts in terms of stem and leaves. Three bacterial strains were acquired in lyophilized form from the Microbial type culture collection centre in Chandigarh, India, and were revived using Nutrient agar. Ethanol was used to extract bioactive chemicals from the plant species. The extracts of both plant sections had antibacterial activity against all of the bacterial strains tested, although there was a significant variation in their antibacterial effectiveness between the two plant parts.

**Keywords:** Antibacterial, Ethanol, Resistance, *Tinospora cordifolia*

### REFERENCES

- Alanis, A.D., Calzada, F., Cervantes, J.A., Torres, J. and Ceballos, G.M. (2005). Antibacterial properties of some plants used in Mexican traditional medicine for the treatment of gastrointestinal disorders. *Journal of Ethnopharmacology*, 153–157.
- Drugs.com. *Tinospora* [Internet]. India; (2020) [updated 2020 July 6; cited 2021 September 24]. Available from: <https://www.drugs.com/npp/tinospora.html>.
- Jeyachandran, R., Xavier, T.F. and Anand, S.P. (2003). Antibacterial activity of stem extracts of *Tinospora cordifolia* (Willd) Hook. F & Thomson. *Ancient Science of Life*, 23: 40–43.
- Kumar, P., Kamle, M., Mahato, D.K., Bora, H., Sharma, B., Rasane, P. and Bajpai, V.K. (2020). *Tinospora cordifolia* (Giloy): Phytochemistry, Ethnopharmacology, Clinical Application and Conservation Strategies. *Current Pharmaceutical Biotechnology*, 21: 1165-1175.
- Magaldi, S., Mata-Essayag, S., Hartung de Capriles, C., Perez, C., Colella, M.T., Olaizola, C. and Ontiveros, Y. (2004). Well diffusion for antifungal susceptibility testing. *International Journal of Infectious Diseases*, 8: 39–45.
- National Health Portal (2016). Importance of medicinal plants and herbs, India [updated 2016 May 20; cited 2021 September 24]. Available from: [https://www.nhp.gov.in/introduction-and-importance-of-medicinal-plants-and-herbs\\_mtl](https://www.nhp.gov.in/introduction-and-importance-of-medicinal-plants-and-herbs_mtl).
- Rao, N. and Kaladhar, D. (2014). Biochemical and Phytochemical Analysis of The Medicinal Plant, *Kaempferia Galanga Rhizome Extracts*. *International Journal of Scientific Research*, 3(1): 18-20.
- Saha, S. and Ghosh, S. (2012). *Tinospora cordifolia*: One plant, many roles. *Ancient Science of Life*, 31: 151–159.
- Sinha, K., Mishra, N.P., Singh, J. and Khanuja, S.P.S. (2004). *Tinospora cordifolia* (Guduchi), a reservoir plant for therapeutic applications: A Review. *Indian Journal of Traditional Knowledge*, 3: 257–70.
- Upadhyay, A.K., Kumar, K., Kumar, A. and Mishra, H.S. (2010). *Tinospora cordifolia* (Willd.) Hook. f. and Thoms. (Guduchi) - Validation of the Ayurvedic pharmacology through experimental and clinical studies. *International Journal of Ayurveda Research*, 1: 112–121.

\*Corresponding Author