

EVALUATION OF THE ANTIBACTERIAL ACTIVITY OF BARK OF *LITCHI CHINENSIS* AGAINST *ESCHERICHIA COLI*, A UTI CAUSING ORGANISM

V.K. Deshwal *¹, K. Vig ¹, S.B. Singh ¹ and P.D. Devi ²

Department of Microbiology

¹Doon (P.G.) Paramedical College, Dehradun-248 001, Uttarakhand, India

²Doon (P.G.) College of Agriculture Science and Technology, Dehradun-248 007, Uttarakhand, India

*corresponding author and Email ID: vishal_deshwal@rediffmail.com

Contact number: +919897538555

Abstract: Main focus of present study was to screen the UTI patients, classification of patient on the basis of sex, age and antimicrobial activity of different ethanol, aqueous extracts of bark of *Litchi chinensis* L. against *Escherichia coli*. Agar well diffusion method was used to evaluate antibacterial activity against *E. coli*. Result suggested that Ethanol extract of *Litchi chinensis* shows more antibacterial activity as compared to aqueous extract, and norfloxacin against *E. coli*. On the basis of microbial count in urine sample, 30 out of 97 suspects were UTI positive. 70% females were UTI positive. Most infections were seen in age group of 16-30yr in both male (13.3%) as well as female (30%). Ethanol extract (30mg/ml) showed 31.86% more inhibition zone as compared to norfloxacin (30mg/ml). Aqueous extract (30mg/ml) also showed 23.56% more inhibition zone as compared to norfloxacin (30mg/ml)

Keywords: *Litchi chinensis*, Antibacterial, *E. coli*, UTI

REFERENCES

- Deshwal, V.K. and Siddiqui, M.M.M.** (2011a). Screening and Evaluation of Anti-microbial Activity in *Tylophora indica* and *Cassia sophera*. *Biochem Cell Arch.* **11(2)**: 461-464.
- Sukhdev** (2006). A selection of prime Ayurvedic plant drugs Ancient modern concordance. Anamaya Publishers, New Delhi.
- Singh, K., Tiwari, V. and Prajapat, R.** (2010). Study of Antimicrobial Activity of Medicinal Plants Against Various Multiple Drug Resistance Pathogens And Their Molecular Characterization And it's Bioinformatics Analysis Of Antibiotic Gene From Genomic Database With Degenerate Primer Prediction. *International Journal of Biological Technology.* **1(2)**:15-19.
- Jacobsen, S.M., Stickler, D.J., Mobley, H.L.T. and Shirliff, M.E.** (2008). Complicated Catheter-Associated Urinary Tract Infections Due to *Escherichia coli* and *Proteus mirabilis*. *Clinical Microbiology Reviews.* **21(1)**: 26-59.
- Ronald, A.R., Nicolle, L.E., Stamm, E., Krieger, J., Warren, J., Schaeffer, A., Naber, K.G., Hooton, T.M., Johnson, J., Chambers, S. and Andriole, V.** (2001). Urinary tract infection in adults: research priorities and strategies. *International Journal of Antimicrobial Agents.* **17**: 343-348.
- Besra, S.E., Sharma, R.M. and Gomes, A.** (1996). Antiinflammatory effect of petroleum ether extract of leaves of *Litchi chinensis* Gaertn. (Sapindaceae). *Journal of Ethnopharmacology.* **54(1)**: 1-6.
- Deshwal, V.K. and Vig, K.** (2011a). Screening for Antibacterial activity of seeds of *Tribulus terrestris* L. growing in Uttarakhand (INDIA). *International Journal of Pharmaceutical Invention.* **1(1)**: 42-46.
- Menzel, C.M.** (1983). The control of floral initiation of lychee: A review. *Scientia Horticulturae.* **21**: 201-215.
- Bhoopat, L., Srichairatanakool, S., Kanjanapothi, D., Taesotikul, T., Thananchai, H. and Bhoopat, T.** (2011). Hepatoprotective effects of lychee (*Litchi chinensis* Sonn.): a combination of antioxidant and anti-apoptotic activities. *Journal of Ethnopharmacology.* **136(1)**: 55-66.
- Holt, J.G., Krieg, N.R., Sneath, P.H.A., Staley, J.T. and Williams, S.T.** (1994). Bergey's manual of determinative bacteriology, 9th edn. Baltimore: Williams and Wilkins press.
- Ekwenye, U.N. and Elegalam, N.N.** (2005). Antibacterial Activity of Ginger (*Zingiber Officinale* Roscoe and Garlic (*Allium Sativum* L.) Extracts on *Escherichia Coli* and *Salmonella typhi*. *International Journal of Molecular Medicine and Advance Sciences.* **1(4)**: 411-416.
- Williams, G.J., Wei, L., Lee, A. and Craig, J.C.** (2006). Long-term antibiotics for preventing recurrent urinary tract infection in children. *Cochrane Database of Systematic Reviews* 2006, Issue **3** [DOI: 10.1002/14651858.CD001534.pub2]
- Hansson, S. and Jodal, U.** (2004). Urinary tract infection. In: Avner ED, Harmon W, Niaudet P, eds. Pediatric nephrology. 5th ed. Philadelphia, PA: Lippincott Williams & Wilkins. : 1007-1025.
- Parekh, J., Jadeja, D. and Sumitra, C.** (2005). Efficacy of Aqueous and Methanol Extracts of Some Medicinal Plants for Potential Antibacterial Activity. *Turkish Journal of Biology.* **29**: 203-210.
- Indul, M.N., Hatha, A.A.M., Abirosh, C., Harsha, U., Vivekanandan, G.** (2006). antimicrobial activity of some of the south-indian spices against serotypes of *Escherichia coli*, *Salmonella*, *Listeria*

monocytogenes and *Aeromonas hydrophila*. *Brazilian Journal of Microbiology*. **37**: 153-158.

Nair, R. and Chanda, S.V. (2007). Antibacterial Activities of Some Medicinal Plants of the Western Region of India. *Turkish Journal of Biology*. **31**: 231-236.

Al-Bayati, F.A. and Al-Mola, F. (2008). Antibacterial and antifungal activities of different parts of *Tribulus terrestris* L. growing in Iraq. *Journal of Zhejiang University Science*. **9(2)**: 154-159.

Elekwa, I., Okereke, S.C. and Ekpo, B.O. (2009). Preliminary phytochemical and antimicrobial investigations of the stem bark and leaves of *Psidium guajava* L. *Journal of Medicinal Plants Research*. **3(1)**: 45-48.

Gillitzer, P., Martin, A.C., Kantar, M., Kauppi, K., Dahlberg, S., Lis, D., Kurle, J., Sheaffer, C. and Wyse, D. (2012). Optimization of screening of native and naturalized plants from Minnesota for antimicrobial activity. *Journal of Medicinal Plants Research*. **6(6)**: 938-949.

Getachew, B., Yinebeb, T., Tadesse, K., Ariaya, H. and Yalentsehay, M. (2011). Antibacterial activity of five oil bearing Ethiopian medicinal plants against eleven pathogenic bacterial strains. *Medicinal Plants-International Journal of Phytomedicines and Related Industries*. **3(4)**: 293-299.