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A Natural Drugstore Comparative Analysis of Biologically Active Compounds Isolated from Azadirachta Indica and their Therapeutic Importance

Sunita Singh[1], Srishti Sharma[2] and Rashmi Singh[3]

[1,2,3]Department of Biochemistry Shivaji College (Accredited with Grade 'A' by NAAC)
University of Delhi, New Delhi 110027, INDIA
***E-mail**: [1]sunitasingh@shivaji.du.ac.in, [1]sunita_iitd@yahoo.com,*
[3]rashmisingh311997@gmail.com, [2]srisharma12@gmail.com

Abstract—*India is known for diverse geographical and climatic variations and since ages is one of the richest nation with a vast herbal medicinal wealth. The use of medicinal plants like Amla, Aswagandha, Bael, Tulsi, Neem and Dalchini and others dates back to the vedic period. The Neem (Azadirachta indica), which is a native of India is also known as 'Azad- Darakth- E-Hind' in Persian, which means 'Free tree of India'. It has been extensively used in Ayurveda, Unani and Homoeopathic medicines. In Sanskrit it is considered as 'Sarbaroganibarini' and is known by the name 'Arishtha' meaning 'reliever of sickness'. The different parts of the tree i.e., leaf, bark, flowers, fruits, twig, gum, seed pulp and extracted oil have been known for their medicinal importance. Biologically active principles isolated from different parts of the plant include: azadirachtin, meliacin, gedunin, salanin, nimbin, valassin and many other derivatives of these principles.*

Neem is reported to be used as a potential candidate for analgesic, hypoglycemic, antifertility, antiulcer, antimalarial, antifungal, antibacterial, antiviral, hepatoprotective and antioxidant effects. Neem also enhances the immune system – making it a possible substance of use for AIDS and cancer patients. The usage of neem oil also have potential application in health and personal care products as it helps in fighting of acne and pimples as well as improves the skin elasticity. Neem may exert its chemopreventive effects by reduced formation of lipid peroxides and enhanced levels of antioxidants and detoxifying enzymes. Neem leaf aqueous extract has also been shown to effectively suppress oral squamous cell carcinoma.

The above biologically active components of Neem can be characterized by High Pressure Liquid Chromatography (HPLC) and their antibacterial activity further analyzed by in silico studies. This paper explores the medicinal use of Neem by Ayurveda, using modern science as a tool.