

Saikat Gantait · Jayoti Majumder ·  
Amit Baran Sharangi *Editors*

# Biotechnology of Medicinal Plants with Antiallergy Properties

Research Trends and Prospects

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# The Anthelmintic Impact of *Nyctanthes arbor-tristis* Leaves: An Antiallergic Plant on *Caenorhabditis elegans*



Surabhi Usturge , Motilal Panigrahi , and Jitendriya Panigrahi

**Abstract** *Nyctanthes arbor-tristis* (NAT), commonly known as the “Coral Jasmine” or “Parijat” plant, is renowned in traditional medicine systems, such as Ayurveda and traditional Indian medicine, for its potential antiallergic properties. NAT is believed to possess anti-inflammatory properties, which could potentially help alleviate allergic reactions. Allergies often involve an inflammatory response triggered by the immune system. So, compounds with anti-inflammatory effects might help reduce the severity of allergic symptoms. Anthelmintic substances can affect the immune system, often by modulating immune responses to parasitic infections. By regulating immune function, anthelmintic properties could potentially help in reducing the overall hypersensitivity and exaggerated immune reactions that characterize allergies. Anthelmintics now used to treat disorders brought on by parasitic worms have unpleasant side effects like headaches, nausea, diarrhea, and lack of appetite. These factors made it necessary to look for natural anthelmintics. Due to its medicinal properties, the leaf extract of NAT is tested for antibacterial, antioxidant, and phytochemical activities. Further, the anthelmintic action of NAT ethyl acetate leaf extract, if any, is also tested on *Caenorhabditis elegans* (CES), which are non-parasitic but mimic the Order of parasitic worms and are easy to get and employ for “*in vitro* testing”. The above leaf extract at a concentration of 1.5% revealed decreased egg hatching rates and larval movement, indicating that NAT has an anthelmintic effect on CES. Alkaloids, amino acids, carbohydrates, cardiac glycosides, flavonoids, and phenolics were detected in the phytochemical test results. NAT leaf extract’s antibacterial activity effectively inhibited Gram-positive and Gram-negative bacteria. Some parasitic infections can trigger immune responses that cross-react with allergens, potentially exacerbating allergies. Anthelmintic treatments could indirectly reduce such cross-reactivity by controlling

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S. Usturge · J. Panigrahi (✉)

Department of Biotechnology, Shri Alpesh N Postgraduate Institute of Science and Research, Anand, Gujarat, India

M. Panigrahi

Department of Mathematics & Humanities, Institute of Technology, Nirma University, Ahmedabad, Gujarat, India

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