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RHIZOSPHERE OF *HOTTUYNIA CORDATA* AS A NICHE FOR PLANT GROWTH PROMOTING, ANTIBACTERIAL METABOLITES AND HYDROLYTIC ENZYME PRODUCING *PROTEOBACTERIA* AND *FIRMICUTES*

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ABSTRACT

Houttuynia cordata is a perennial aromatic medicinal plant which exhibits a wide range of pharmaceutical activities such as antibacterial, antiviral, anti-inflammatory, immunologic, anticancer, antioxidative and antimutagenic effects. In the present study, we investigated the diversity of culturable rhizospheric bacteria as well as endophytes from root and rhizome. A total of 183 morphologically different isolates were obtained, of which 21, 13 and 149 isolates were isolated from root, rhizome, and rhizosphere respectively. The isolates were characterized for various metabolic, plant growth promoting and other biotechnologically useful activities, based on which they were clustered into four groups by principal component analysis. The restriction fragment length polymorphisms analysis grouped all the isolates into 12 phylotypes and majority of the isolates were found to be associated with Proteobacteria and Firmicutes. Proteobacteria predominantly showed plant growth promoting and antibacterial activities, while Firmicutes constituted a higher proportion of hydrolytic enzyme producers.

***KEYWORDS**: Endophytes, Houttuynia Cordata, Rhizospheric Bacteria*

Article History

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