Study the phyllotaxis with a new molecular depiction of Nuclear ITS region of locally isolated Avicennia marina plant

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Abstract

Five leaf samples were collected from grey mangrove plants found along the coastline of Khor Al Zubair oil port in the Khor Al Zubair region, located southwest of Basra Governorate, Iraq. DNA was extracted from dried leaf material, and then the nuclear internal transcribed spacer (ITS) region, involving ITS1, the 5.8S rRNA region, and ITS2, ranging in size from 700 to 720 bp, was amplified using specific primers. Among the samples collected, three originated from plants exhibiting two leaves at each node (opposite leaves), while the remaining two samples were obtained from plants with three leaves at each node (whorled leaves). The current study primarily focuses on leaf arrangements termed as whorled leaves, which were observed in two of the collected samples, this pattern is unfamiliar in the *Avicennia marina*. Hence, there may be a correlation between the ITS region and the phyllotaxis pattern of these plants. Alignment analysis of a high quality sequence of 692 base pairs revealed significant similarity with the internal transcribed spacer (ITS) of *Avicennia marina*. This sequence has been deposited in GenBank under the new accession number (PP237061), it was then, aligned with those from 16 other documented ITS regions of *Avicennia marina* specimens in NCBI to construct a comparative phylogenetic tree consisting of 32 nodes and 17 tips.

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