



First report of a '*Candidatus* Phytoplasma aurantifolia' isolate associated with a yellowing disease of *Barleria prionitis*

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Barleria prionitis (Acanthaceae), known as porcupine flower, is a medicinal plant species native to India and commonly found across Africa, Sri Lanka, and tropical Asia (Chavana *et al.*, 2010). *B. prionitis* leaves are used as expectorant, pain relief and a remedy against ulcer and fever. Plants showing symptoms of yellowing, little leaf and early senescence (Fig. 1) were observed during June 2010 at the Botanical Garden of Delhi University, India. Five plants with symptoms indicating phytoplasma infection and two symptomless plants were collected for genomic DNA isolation from stem tissue. Purified DNA was subjected to nested-PCR using generic phytoplasma primers targeting the 16S ribosomal RNA gene P1/P7 (Deng & Hiruki, 1991), followed by fU5/rU3 (Lorenz *et al.*, 1995). PCR amplification products from the first round (P1/P7) were diluted (1:30) and used in the second round (fU5/rU3). The symptom-bearing plant samples exhibited a PCR band of expected size (~880bp), while symptomless samples showed no PCR amplification. The PCR amplicons were gel eluted and purified using the QIAquick gel extraction kit (QIAGEN, USA), and directly sequenced bi-directionally. BLAST comparisons of the partial 16S rDNA sequence (GenBank Accession No. JF958127) corresponding to *B. prionitis* phytoplasma, strain Dhba1, revealed the highest sequence identity (99%) with those of members of the 16SrII group '*Candidatus* phytoplasma aurantifolia'. A maximum parsimony dendrogram (MEGA version 4.01) based on the partial 16S rDNA sequences of the *B. prionitis* phytoplasma and 15 other reference phytoplasmas (<http://www.ncbi.nlm.nih.gov>) supported the sequencing results since the *B. prionitis* phytoplasma grouped within the 16SrII phytoplasma clade.

The current study reports *B. prionitis* as a new host for the 16SrII phytoplasma group in India and worldwide. Previous reported diseases from India including leaf yellowing, chlorosis and little leaf of lettuce,

carrot and French bean have shown to be associated with phytoplasmas belonging to group 16SrII (Arocha *et al.*, 2008). Therefore, these results have a significant phytosanitary impact for the epidemiology of 16SrII phytoplasma diseases in the country.

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Figure 1

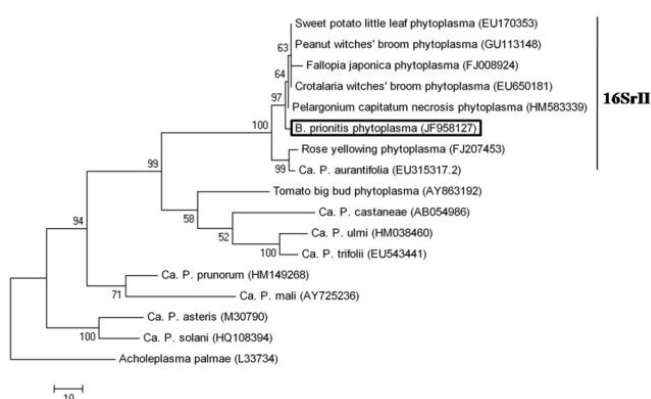


Figure 2

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