

Article: *Candidatus Phytoplasma omanense*, associated with witches'-broom of *Cassia italica* (Mill.) Spreng. in Oman. *Int J Syst Evol Microbiol*

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**ABSTRACT:** Samples from plants of *Cassia italica* exhibiting typical witches'-broom symptoms (*Cassia* witches'-broom; CWB) were examined for the presence of plant pathogenic phytoplasmas by PCR amplification using universal phytoplasma primers. All affected plants yielded positive results. RFLP analyses of rRNA gene products indicated that the phytoplasmas detected were different from those described previously. Phylogenetic analysis of 16S rRNA gene sequences confirmed that CWB represents a distinct lineage and shares a common ancestor with '*Candidatus Phytoplasma phoenicium*'. Molecular comparison revealed that the 16S rRNA gene sequences of the four CWB strains (IM-1, IM-2, IM-3 and IM-4) identified in symptomatic *C. italica* samples were nearly identical (99.6-100 % similarity). The closest relatives were members of the pigeon pea witches'-broom phytoplasma ribosomal group (16SrIX; 95-97 % sequence similarity). On the basis of unique 16S rRNA gene sequences and biological properties, the phytoplasma associated with witches'-broom of *C. italica* in Oman represents a coherent but discrete novel phytoplasma, '*Candidatus Phytoplasma omanense*', with GenBank/DDBJ/EMBL accession number EF666051 representing the reference strain.