



First report of *Pseudomonas marginalis* isolated from celery with symptom of stem rot in China

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In October to December of 2015, severe outbreaks of a previously unidentified pathogen causing stem rot were observed on celery (*Apium graveolens*) plants grown commercially in Beijing, China. The initial symptoms manifested as the emergence of a light yellow stripe on the stem. The stripe gradually turns brown and the stem starts to shrink. The last stage of the disease entails rot, accompanied by a fetid odor. When grown on King's B medium (KB) at 28 °C, colonies of a bacterium isolated from the symptomatic stem were milky white, translucent, and produced fluorescent pigment under ultraviolet light. The 16S rDNA was sequenced (GenBank accession No. MG765472) and showed 99% similarity to that of *Pseudomonas marginalis* ICMP 3553^T (GCA_001645105.1). The characteristic average nucleotide identity was identified based on whole genome sequencing of the bacterium (PKKS00000000), which proved 98% similarity to that of *P. marginalis* ICMP 3553^T (GCA_001645105.1). The traditional physiological and biochemical tests and the Biolog GN2 microplate system (Biolog, Haywood, CA, USA) further confirmed our finding that the culprit pathogen is *P. marginalis* (Lelliott et al., 1966). Celery plants were inoculated by injecting a bac-

terial suspension (3 ml/ inoculation plant, 2×10^8 CFU/ml) into the stems, using a sterilized hypodermic needle and were then kept in a moist chamber for 15 days at 28 °C with a 12-h photoperiod. Sterile distilled water was used for inoculating the stems of control plants. Stems inoculated with the pathogen manifested symptoms within 7–10 days similar to those observed in the field. The *P. marginalis* strains were re-isolated successfully from symptomatic celery to complete Koch's postulates. No symptoms were present in the controls. Celery bacterial rot caused by *P. marginalis* (Sumino and Shirai, 2009) has previously been reported in Japan, but to the best of our knowledge, this is the first report of *P. marginalis* infecting celery in China.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interests.

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