First report of cucumber mosaic virus infecting pear in Korea

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A survey for pear viruses was conducted during 2017 in Namyangju, Naju, Chonan, Sangju, and Ulsan provinces, which are important fruit-growing areas in Korea. Pear trees with typical mosaic viral symptoms were observed in Namyangju and Sangju provinces. In total, 10 leaf samples with mosaic symptoms and 10 symptomless samples were collected and tested for viruses. Apple mosaic virus (ApMV), which is the only virus reported as showing mosaic symptoms on infected pears in Korea, was not detected by RT-PCR (Cho et al. 2015). Recently, a study reported that cucumber mosaic virus (CMV) was infecting apple trees in China (Hu et al. 2016). Based on the symptoms and this previous study, CMV infection was suspected. Samples were selected and the presence of CMV was confirmed by RT-PCR using *Cucumovirus* genus-specific primers designed from a highly conserved region of the coat protein (CP) gene (5'-TGGTCGTCCTCAACTATTAACCAC-3' and 5'-TACTGATAAACCAGTACCGGTGA-3') (Choi et al. 1999). DNA fragments of the expected size (321 bp) were amplified, cloned, and sequenced. BLAST analysis of a CMV sequence (LC375157) showed 99% identity with the CP gene of several CMV isolates of *Rudbeckia hirta* (GU327365), *Capsicum annuum* (KC527751), *Nicotiana benthamiana* (AB369273), *Cucumis sativus* (KT270569), and *Cucumis melo*

(KT270566). Furthermore, phylogenetic analysis indicated that the virus isolate named CMV-Pns belongs to the CMV group IB. CMV-Pns caused weak systemic mosaic symptoms on *Nicotiana glutinosa* and *N. rustica* at 10 to 14 days post inoculation. To our knowledge, this is the first report of CMV infection in pear trees in Korea.

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