First report of tobacco mosaic virus infecting *Vitis coignetiae* in Korea

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Vitis coignetiae (family Vitaceae) is a wild vine plant, whose fruit is rich in anthocyanins and used in medicine and food industries. During a survey in July 2018, *V. coignetiae* leaves with viral infection-like symptoms, such as clear mosaic, mottling, and foliage discoloration, were observed in Gwangju, Korea. To investigate the causative virus, 10 symptomatic leaves were selected and analyzed by DAS-ELISA using specific polyclonal antibodies against cucumber mosaic virus, pepper mottle virus, tobacco mosaic virus (TMV), tomato spotted wilt virus, and tomato mosaic virus (Agdia, Elkhart, U.S.A). None of the samples reacted with any of the antiserum, except with that against TMV. To further confirm TMV infection, RT-PCR was performed using TMV-specific primers designed from a highly conserved region of the coat protein (CP) gene 5'- ATGTCCTTACAGTATCACTACTCC-3' and 5'-TCAAGTTGCAGGACCAGAGGT-3' (Choi et al., 2009). DNA fragments of the expected size (485 bp) were amplified,

and then cloned and sequenced. The BLAST analysis of TMV sequence (LC417210) showed 99% identity with the CP gene of several TMV isolates of tobacco (KJ438787), *Glycine max* (JQ895560), *Solanum melongena* (AY360447), and *Vicia faba* (AJ011933). The virus (named TMV-Vc) caused necrotic lesions on *Nicotiana benthamiana* and *N. rustica* at five days post inoculation (dpi), whereas severe systemic mosaic symptoms were observed in *Chenopodium album* at 10 to 14 dpi. To our knowledge, this is the first report of TMV infection in *V. coignetiae* in Korea.

Reference

Choi S-K, Yoon J-Y, Chung B-N (2009) Genome analysis and characterization of a tobacco mosaic virus isolate infecting balsam (*Impatiens balsamina*). Arch Virol 154:881–885

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