



First report of natural infection of potato virus Y on *Solanum nigrum* L. in China

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In August 2018, virus-like symptoms of chlorosis, crinkling of leaves and stunted growth were observed on the plants of Chinese herb *Solanum nigrum* in Zhejiang province, China. Fifteen samples having above virus-like symptoms were collected for RNA extraction. All the collected samples were analyzed for the presence of viruses using small-RNA (sRNA) sequencing (Kreuze et al. 2009) and reverse transcription-PCR (RT-PCR). Small RNAs were *de novo* assembled into longer contigs and identified by VirusDetect software (Zheng et al. 2017). The presence of three viruses was inferred: potato virus Y (PVY), tobacco vein-clearing virus (TVCV) and tomato pseudo-curly top virus (TPCTV). Forty-one contigs showed 98.7 to 100 % nucleotide (nt) identity with the genome sequence of PVY (MF624282.1). To further confirm the presences of PVY, primer pair (PVY-F: AACATAGGCTTGAGG CGA and PVR-R: ATGACGAAATCACCTGC) were designed and RT-PCR was conducted. The amplicon was approximately 1180 bp in length, covering part of the NIb gene, the entire coat protein and the 3' untranslated region. Sequence (GenBank accession No. MN833214) analysis showed it shared 99 % nucleotide sequence identity with the reported sequences (JF927750.1, AB185832.1 and MH933741.1). Furthermore, a total of 45 samples were collected and verified by DAS-ELISA with 42 samples (93%) testing positive. The presence of TVCV and TPCTV

could not be confirmed by DNA-PCR. To our knowledge, this is the first report of PVY infecting *S. nigrum* in China. Due to the possible presence of other viruses in the PVY-infected plants, it remains impossible to evaluate the association between PVY and symptoms observed in *S. nigrum*.

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