



# First report of cucumber mosaic virus infecting *Pseudostellaria heterophylla* in China

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Received: 29 September 2018 / Accepted: 3 September 2019 / Published online: 10 November 2019  
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**Keywords** CMV · *P. heterophylla* · PCR · Transmission electron microscopy · Coat protein

*Pseudostellaria heterophylla*, a perennial herb belonging to the family Caryophyllaceae is widely grown in China as a medicinal plant (Han et al. 2009). During autumn 2017, mosaic and leaf malformation of *P. heterophylla*, were observed in Xuancheng, Anhui province with disease incidence of about 95.6% (Supplementary Fig. 1). To identify the causal agent of the disease, 14 samples each from healthy and symptomatic plants were collected. Spherical virus particles with diameter 28 to 30 nm were observed by transmission electron microscopy (TEM) in partially purified preparations from symptomatic leaves. Total RNA was extracted using Trizol (Invitrogen) and reverse-transcribed by PrimeScript™ RT reagent Kit (Takara). PCR assay was carried out with primer pair CP-F:5'-GTAGACATCTGTGACGCGA-3' and CP-R:5'-GCGCGAAACAAGCTTCTTATC-3' (de Blas et al. 1994). Amplicons of the expected size (540 bp) were obtained from symptomatic but not from asymptomatic samples, cloned and sequenced. The obtained sequences (GenBank accession No. MG190364) analyzed by BlastN against the

NCBI database revealed 99% identity with the corresponding sequences of CP of cucumber mosaic virus (CMV). The phylogenetic analysis showed that the new isolate CMV-Ax shares common ancestor with American, Caribbean and European isolates of CMV (Supplementary Fig. 2). Therefore, another PCR assay was carried out using CMVF: 5'-AGGTYCTWACAGCAATHA-3' and CMVR: 5'-ACAATGGTGTACCGAAG-3' (designed herein) to test for CMV in 45 more symptomatic samples, which all tested positive for CMV. Furthermore, *Aphis craccivora* and *Myzus persicae*, successfully transmitted the virus, as confirmed by RT-PCR 30 days post-inoculation. According to our knowledge, this is the first report of CMV infecting *P. heterophylla* and may pose a serious threat to its cultivation in China.

## References

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**Electronic supplementary material** The online version of this article (<https://doi.org/10.1007/s42161-019-00397-1>) contains supplementary material, which is available to authorized users.

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