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Two tombusviruses isolated from lisianthus [*Eustoma grandiflorum* (Raf.) Shinn.] with necrotic stunt

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ABSTRACT

From diseased leaves of Lisianthus plants [*Eustoma grandiflorum* (Raf.) Shinn.] with necrotic stunt symptoms Nagano and Shizuoka prefectures in Japan, we isolated two viruses with a diameter of ca. 30 nm and tentatively named them Nag-4 and Shiz-1, respectively. Both viruses reproduced necrotic spots on healthy lisianthus plants after mechanical inoculation. Based on virion morphology, double-stranded RNA analysis, molecular mass of the coat protein (CP) and serological tests, the viruses were closely related to species in the genus *Tombusvirus*. In a comparison of the amino acid sequence of the CP genes, Shiz-1 had high identity with that of *Tomato bushy stunt virus*-nipplefruit strain (TBSV-Nf), whereas Nag-4 shared less than 87% identity with sequences reported for tombusviruses, suggesting that the virus might be a new species in the genus *Tombusvirus*. This is the first report of tombusvirus disease on lisianthus in the world.

Key words: lisianthus, necrotic stunt, tombusvirus, *Tomato bushy stunt virus*

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