

Different symptomatologies of infected tobacco plants from two full-length cDNA clones of *Apple chlorotic leaf spot virus*

Lei Zhang, Wilhelm Jelkmann

Julius Kühn-Institut, Institute for Plant Protection in Fruit Crops and Viticulture, Dossenheim

Email of corresponding author: lei.zhang@jki.bund.de

Apple chlorotic leaf spot virus (ACLSV) is the type species of genus *Trichovirus* within the family *Betaflexiviridae*. It has a filamentous particle containing positive single-strand RNA genome of about 7.5 kb. In nature ACLSV infects pome and stone fruit and induces obvious symptoms or hidden disorders on them.

In lab experiments *Chenopodium quinoa* and *Nicotiana occidentalis* are useful host plants of ACLSV. In the present work different symptomatologies were observed on *N. occidentalis* 37b which were infected with constructed full-length cDNA clones of two different ACLSV isolates of apple and pear, respectively. ACLSV-infected samples of apple and pear leaves were collected

from the Virus Resource Center at the JKI Dossenheim. The In-Fusion™ cloning system was used for constructing cDNA clones. The cDNA genome of ACLSV was ligated to a binary vector (a pBin vector, E. Maiss, Leibniz University, Hannover) under control of a 35S promoter.

The efficiency of the constructs was tested on *N. occidentalis* 37b by Agrobacterium-mediated transformation. Symptoms of yellow/chlorotic spots developed between 8 to 12 dpi on infected plants. The infectious cDNA clone of the apple isolate showed considerably stronger symptoms compared to the one of pear. Over time systemic symptoms were observed on infected plants.