

Characterization of *papaya ring spot virus* (PRSV) genome encoded proteins for silencing suppression characteristics

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One of the most harmful and destructive disease of papaya is the papaya ringspot (PRS) disease caused due to the PRSV (*Papaya ringspot virus*). It belongs to the family *Potyviridae* and genus *Potyvirus*. PRSV virions are filamentous, flexuous in nature, approximately 780 nm x 2 nm long and it contains a single molecule of linear positive sense ssRNA approximately 10.3 kb in length. The entire virus consists of the following genes: *P1*, *HC-Pro*, *P3*, *6K1*, *CI*, *6K2*, *VPg*, *NIa*, *NIb* and *CP*. These genes were cloned into pGEMT-easy vector and sub cloned into binary vector pCB302. After that agroinfiltration and on-spot silencing assay of the individual genes were done using UV Fluorescence

Spectrophotometer to check the silencing suppression characteristics of individual genes. An emission spectrum was obtained using UV Fluorescence Spectrophotometer to further confirm the obtained results. In UV Fluorescence Spectrophotometer the excitation wavelength was set as 309 nm and the emission wavelength was set as 509 nm. From the spectrum obtained it can be presumed that CI and HC-Pro Hyd are potent silencing suppressors of PRSV-Hyd. The main objective of this project was characterization of PRSV (*Papaya ringspot virus*) encoded proteins for silencing suppression characteristics.

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