

Analysis of A New Cucumber Mosaic Virus (CMV), Strain CLW2 from Malaysia

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Cucumber mosaic virus (CMV) is a member of the cucumovirus genus in the family of *Bromoviridae*, of the alpha-like superfamily. A new strain of Cucumber mosaic virus (CMV), namely strain CLW2 was isolated from Mardi Teluk Telong, Malaysia. It has been shown to induce severe mosaic, mottling and vein bending symptoms on infected cucumber leaves. Virus particles were extracted from infected plants by using an ultra centrifugation method. SDS-PAGE analysis showed that the coat protein of CLW2 is about 24.5 KDalton. Full length genome of CLW2 was amplified by using an overlap and extension RT-PCR strategy. It was then cloned into a PCR Blunt Topo vector and sequenced. The RNA consists of four species designated RNAs 1, 2, 3 and 4 in order of decreasing molecular weight. The three genomic RNAs, designated RNA 1 (3.349kb in length), RNA 2 (3.045kb) and RNA 3 (2.219kb) are packaged in individual particles; a subgenomic RNA, RNA 4 (1.033kb), is packaged with the genomic RNA 3. In addition, the small 2b protein is expressed from the 3' terminal sequences of RNA2, via subgenomic RNA 4A (691bp). The RNAs encoded five proteins: 1a (990aa), 2a (858aa), 2b (111aa), 3a (279aa) and 3b (218aa), with roles as RNA dependent RNA polymerase, movement protein and coat protein respectively. Phylogenetic analysis suggests that strain CLW2 belonged to subgroup IB of the Cucumber mosaic virus.