

Cloning, Expression and Protein Purification of AV1 Gene of Okra Leaf Curl Virus Egyptian Isolate and Genetic Diversity between Whitefly and Different Plant Hosts

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Abstract : Begomoviruses are economically important plant viruses that infect dicotyledonous plants and exclusively transmitted by the whitefly *Bemisia tabaci*. Here, replicative form was isolated from Okra, Cotton, Tomato plants and whitefly infected with Begomoviruses. Using coat protein specific primers (AV1), the viral infection was verified with amplicon at 450 bp. The sequence of OLCuV-AV1 gene was recorded and received an accession number (FJ441605) from Genbank. The phylogenetic tree of OLCuV was closely related to Okra leaf curl virus previously isolated from Cameroon and USA with nucleotide sequence identity of 92%. The protein purification was carried out using His-Tag methodology by using Affinity Chromatography. The purified protein was separated on SDS-PAGE analysis and an enriched expected size of band at 30 kDa was observed. Furthermore, RAPD and SDS-PAGE were used to detect genetic variability between different hosts of okra leaf curl virus (OLCuV), cotton leaf curl virus (CLCuV), tomato yellow leaf curl virus (TYLCuV) and the whitefly vector. Finally, the present study would help to understand the relationship between the whitefly and different economical crops in Egypt.

Keywords : okra leaf curl virus, AV1 gene, sequencing, phylogenetic, cloning, purified protein, genetic diversity and viral proteins

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