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DEVELOPING OF SPECIFIC ANTIBODY AGAINST CHICKPEA CHLOROTIC DWARF VIRUS (CPCDV) THROUGH RECOMBINANT COAT PROTEIN

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The legume crops such as chickpea and lentils are mainly cultivated in semi-arid tropic and Mediterranean lands. Chickpea chlorotic dwarf virus (CpCDV) cause major losses on legumes throughout the world. Producing of specific antibody against this virus is crucial for surveys of disease in the fields and assessment of vial resistance in plant cultivars. Present article describes developing of specific antibody against the CpCDV virus by applying recombinant protein. In this study, coat protein of CpCDV was selected as a target for detection and preparation of polyclonal antibody. Therefore, CP gene encoding coat protein of CpCDV was initially PCR-amplified and inserted into bacterial expression vector. Recombinant protein was expressed in BL21 strain of *Escherichia coli*. Purification was carried out under native conditions and the accuracy of recombinant protein production was confirmed by electrophoresis. The purified recombinant coat protein of CpCDV was used for immunization of rabbit. Purification of immunoglobulin molecules was performed by affinity chromatography using protein A column followed by conjugating of IgG to alkaline phosphatase enzyme. The capability of purified antibodies and conjugates for efficient detection of infected plants was assessed by double antibody sandwich enzyme-linked immunosorbent assay (DAS-ELISA), western blotting and dot immunosorbent assay (DIBA). These results proved that prepared IgG and conjugate are able to distinguish with high efficient CpCDV infected plants. To the best of our knowledge, this is the first report for production of anti-CpCDV antibodies raised through recombinant protein technology.

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