FUSION PROTEIN–BASED PRODUCTION OF POLYCLONAL ANTISERUM FOR RICE TUNGRO SPHERICAL VIRUS

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ABSTRACT

DELA CRUZ, ARLEN P. ANGLACER, Institute of Graduate Studies, Central Luzon State University, Science City of Muñoz, Nueva Ecija, November 2005. **FUSION PROTEIN–BASED POLYCLONAL ANTISERUM PRODUCTION FOR RICE TUNGRO SPHERICAL VIRUS**

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This study tested the expediency of producing fusion protein (FP)–based polyclonal antiserum against rice tungro spherical virus' (RTSV) coat protein-1 (CP1). This essentially aimed to locally employ the latest procedures on purification and utilization of FP, derived from a cloned gene, as alterative antigen to the whole virus particles to stimulate production of specific antisera useful in the detection of RTSV CP1 in Western Blotting and indirect Enzyme-Linked Immunosorbent Assay (ELISA).

The Maltose Binding Protein (MBP) domain facilitated the purification of the 65kDa FP in amylose resin affinity chromatography. The purified FP was used as antigen to induce the rabbits' immune responses.

The rabbits were injected with the antigenic FP on the 1st, 3rd and 28th days. After a month of immunization, the rabbits' immune antisera were collected and the antisera specificity was tested in immunodetection analyses.

Western Blot analysis revealed that the crude immune antisera specifically detected the 22.5kDa RTSV CP1 at 1:1000 dilution while it differentiated FP dilution and reacted specifically with the induced-infected and virus-free plant samples in indirect ELISA application at 1:20 dilution.

This study revealed that FP is a potential alternative antigen to the whole virus particles for induction of specific antisera production. The polyclonal antisera can be incorporated into diagnostic kits and can be useful in detecting RTSV in plant sap samples because of its strong affinity to CP1.

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