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Application of cucumber green mottle mosaic virus vector as peptide presentation system

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A novel Cucumber Green Mottle Mosaic Virus vector was constructed by cloning the CGMMV cDNA down stream of a shorten T7 RNA polymerase promoter. The vector was then used to build a recombinant CGMMV vector. Chimeric CGMMV particles which display hepatitis B surface antigen (HBsAg) on the surface were then produced from the recombinant CGMMV vector. The present of HBsAg on the surface of the chimeric virus was verified through ELISA, and the immunogenicity of the epitope was tested through in vitro lymphocytes stimulation assay. Both the ELISA as well as the in vitro lymphocyte stimulation assay gave positive results. This research also found significant higher yield of the expressed peptide when compare to reported chimeric TMV. The biochemical properties as well as structural properties of the HBsAg epitope have also been characterized. Results from this study show that the Cucumber Green Mottle Mosaic Virus (CGMMV) vector offer yet another promising way of expressing peptide. Result also showed that the vector could possibly be a new, flexible, safe and cost effective mean of producing vaccine.