Abstract of Presentation

Note: This paper should be typed in "Times New Roman" of 12pt.

Presentation Title(Should be no more than 20 words):

Expression of Hepatitis B proteins in *Zea mays*.

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Abstract :

Hepatitis B virus (HBV) is a member of *Hepadnaviridae* family and infects over 300 million people worldwide. The envelope of HBV consists of three related polypeptides designated as small (S), middle (M), and large (L) polypeptides. These polypeptides share a common 226 amino acid residues (S- or surface antigen sequence), representing also the C-termini of M and L proteins. The M protein has an additional 55 amino acid sequence (preS2) at the N-terminus (i.e. M protein = S+ preS2). The L protein differs from M protein by an additional 109 or 119 (depending on the subtype) amino acid residues designated preS1 (i.e. L protein = M + preS1).

Plants can be used as inexpensive alternatives to fermentation system for production of important proteins. In this study we aimed to engineer hepatitis B vaccine in plants. Multimeric repeats of HBV preS1 (21-47) DNA sequence were successfully synthesized and cloned into appropriate vectors. Four oligonucleotides were used to synthesize a DNA fragment containing the preS1 (21-47) sequence. The DNA fragment was successfully cloned into vector and the construction was confirmed by PCR and automated DNA sequencer. Moreover, Immature embryos of maize (*Zea mays L.*) were bombarded using Biolistic Gene Gun with plasmid pBHsAg harboring the S gene and the bar gene as selectable marker. Bombarded tissues were selected and regenerated on media containing 3 mg/l Bialaphos. HBsAg gene was detected using PCR analysis and the expression of the gene was tested via Western blot immuno-assay using specific polyclonal antibodies directed against human serum derived HBsAg. Successful integration of the preS1 protein and S protein will produce a cheaper more efficient vaccine against HBV.