# Expression of hepatitis C virus envelope glycoprotein E2 in transgenic rice cell suspension culture

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## Abstract

Hepatitis C virus(HCV) is a major cause of chronic liver disease. The study of HCV has been hampered by the lack of a cell culture system. Clinical and experimental evidence indicates that the hepatitis C virus envelope glycoprotein E2 is the most promising candidate for the development of an effective anti-HCV vaccine. In *E. coli*, insect cells, C-terminal hydrophobic region of glycoprotein E2 has been suggested to induce cell lysis. In mammalian cells, this region interferes with E2 folding and/or secretion. In order to produce E2 containing the C-terminal region, plant cell culture system is used. Because plants have cell wall, they may not be induce cell lysis. The use of plants has received a great deal of attention because of advantages in economical benefit, scalability and safety compared with traditional microbial and mammalian expression systems. Regurated expression and secretion of E2 protein achieved using the promoter, signal peptide and terminator from a rice alpha-amylase gene, αAmy3D. The Ramy3D gene is expressed in response to sugar deprivation. The E2 gene was expressed from the transgenic rice cell culture on the sugar free media. Expression and secretion of protein was observed in transgenic rice suspension culture by Western blot analysis.

## References

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