High Expression Level of Hepatitis C Virus E1 and NS3 Genes under the Control of the Adenoviral Major Late Promoter

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Abstract

Hepatitis C virus (HCV) is the major causative agent of liver diseases which can progress to cirrhosis and hepatocellular carcinoma. It is estimated that more than 300 million people are infected with the HCV worldwide. The E1 and NS3 proteins are essential for viral replication and play critical roles in many biological functions such as viral entry, assembly, budding and secretion of new virions. The E1 and NS3 proteins are two of the most highly conserved proteins in the HCV genome.

In this study, the effect of two adenoviral promoters on the expression of the HCV E1 and NS3 genes was assessed. The E1 promoter has been used for the expression of the E1 protein, while the NS3 promoter was used for the expression of the NS3 protein. The results showed that the E1 promoter driven expression of the E1 protein was higher than the NS3 promoter driven expression of the NS3 protein. These findings suggest that the E1 promoter is more efficient for the expression of the E1 protein than the NS3 promoter.

Introduction

Hepatitis C virus (HCV) is a major global health problem, affecting more than 170 million people worldwide. The HCV genome encodes six non-structural proteins which are responsible for viral replication and assembly. The E1 and NS3 proteins are two of the most highly conserved proteins in the HCV genome.

Methods

Two adenoviral promoters were used to drive the expression of the HCV E1 and NS3 genes, respectively. The E1 promoter was used to drive the expression of the E1 protein, while the NS3 promoter was used to drive the expression of the NS3 protein. The results showed that the E1 promoter driven expression of the E1 protein was higher than the NS3 promoter driven expression of the NS3 protein.

Results

Conclusion

The E1 promoter driven expression of the E1 protein was higher than the NS3 promoter driven expression of the NS3 protein. These findings suggest that the E1 promoter is more efficient for the expression of the E1 protein than the NS3 promoter.

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References


