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IDENTIFICATION AND IMMUNOLOGIC PROPERTIES OF ANTIGENIC REGIONS WITHIN THE HEPATITIS C VIRUS NS3 PROTEIN

The antigenic composition of the hepatitis C virus (HCV) NS3 protein was studied using 23 overlapping PCR fragments derived from the HCV NS3 gene. Each PCR fragment encoded for ~100 aa region of the HCV NS3 protein. All fragments were cloned and expressed as fusion proteins with Glutathione S-transferase (GST) in *E. coli.* Immunoreactivity of these proteins was exarainated using a panel of anti -HCV positive (n= 134) and anti-HCV negative (n=50) serum specimens. Anti -HCV positive specimens were obtained from patients infected with HCV of different genotypes. Eight recombinant proteins containing HCV regions at aa position 1193-1300, 1221-1325, 1261-1367, 1295-1403, 1319-1426, 1340-1441, 1357-1459, and 1375-1494 were found to be immunoreactive. Two of these proteins containing sequences at aa position 1221 -1325 and 1357-1459 detected antibody in 78% and 87% of anti-HCV positive serum samples, respectively. All anti-HCV positive serum specimens used in the present study contain antibody specifically recognizing at least one of these two proteins. The competition experiments demonstrated that these two proteins did not block antibody binding to c33 antigen (1192 -1456 aa). Thus, the results of this study suggest that the HCV NS3 protein contains two different strongly and broadly immunoreactive regions at aa position 1221-1325 and 1357-1459.

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