Antigenic Mapping of the Surface Proteins of Infectious Hepatitis B Virus Particles

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Antigenic Mapping of the Surface Proteins of Infectious Hepatitis B Virus Particles
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Summary

To identify further the surface proteins of the native virus, hepatitis B virus (HBV) particles purified from HBe antigen (Ag)-positive human sera were used as immunogens to produce murine monoclonal antibody (MAb)-secreting hybridomas. The specific binding of antibodies to the HBV envelope (env) proteins was determined in indirect radioimmunoassay and by Western blot analysis. Six MAbs directed against major hepatitis B surface antigen (HBsAg) recognized conformational epitopes on S proteins (P24/GP27). Three preS2-specific MAbs reacted with the middle *env* proteins (GP33s/GP36 s) in the 22 nm HBsAg spherical particles. One MAb, *F222,* was found to react specifically with the two very large (VL) HBV surface proteins with Mr 54K and 66K. The epitope recognized by *F222* was located on the protruding N terminus which, in the assembled virus particles, was readily split off by trypsin or V8 protease treatment. The presence of these VL proteins appeared to correspond to the presence of the large *env* proteins (P39s/GP429. The data described here indicate that F222 probably recognized an assembled topographic site which could be involved in virus entry into hepatocytes. Moreover, our results suggest that the preS-coded part of the HBV *env* proteins, which is sensitive to proteases *in vitro,* could be unstable *in vivo* and stabilized by immunoglobulins.

Key words: HBV/surface proteins/epitopic analysis

Reference

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