

## **An enzyme-linked immunosorbent assay (ELISA) for the detection of IgG and IgM anti-idiotypes directed against anti-HBs molecules.**

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### **Abstract**

A simple and specific enzyme-linked immunosorbent assay (ELISA) has been developed to detect circulating IgG and IgM anti-idiotypic antibodies directed against anti-HBs molecules using 96-well polyvinyl microtitre plates as the solid phase and HRPO-labelled goat anti-HBs as conjugate. Anti-idiotypic reactions were observed in the supernatant portion after precipitation of immune complexes from sera with polyethylene glycol 6000 (PEG). Both IgG and IgM with anti-idiotypic activity were detected concurrently in HBsAg-positive sera from HBV-infected patients and asymptomatic HBV carriers. Anti-idiotypic activity was absent in HBsAg-negative sera from healthy persons, and in patients with non-A, non-B hepatitis and viral hepatitis A. However, such antibodies could be demonstrated in the sera of two out of eight HBsAg vaccine recipients negative for anti-HBs but in none of 11 recipients positive for anti-HBs after receiving a booster immunising dose of HBsAg vaccine. Those sera showing positive anti-idiotypic reactions were free from rheumatoid factor and HBsAg/IgM or HBsAg/IgG complex activity. An analysis of anti-idiotypic positive sera for anti-HBs, HBeAg and HBV-specific DNA-polymerase activity demonstrated these markers in 20%, 30% and 60% of cases, respectively. The presence of anti-idiotypic antibodies was presumed to permit a more active multiplication of hepatitis B virus.