G101 Production and Characterization of Polyclonal Antibodies against α-Fetoprotein with Synthetic Peptides

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α-fetorprotein(AFP) is a well-known embryonal serum protein produced by fetal liver cells, yolk sac cells and some fetal gastrointestinal cells. With respect to clinical significance, AFP is a good marker protein for the detection and diagnosis of several disease like hepatocellular carcinoma, gonadal germ cell tumor, gastric carcinoma and neural tube defects. AFP has been known to be very similar to albumin in the sequence of amino acid as well as the structure and physiological role in human, so that it is really difficult to purify and make a diagnostic kit for AFP. To produce antibodies that recognize AFP with no cross-reactivity to albumin, we synthesized five kinds of peptides corresponding to the epitopes of AFP. The peptides were conjugated to keyhole limpet hemocyanin and used to raise antibodies from rats. The antibodies against synthetic peptides reacted with AFP of hepatocellular carcinoma serum but not with normal human serum and human serum albumin, when anylzed by ELISA and Western blotting. Therefore, the antibodies developed in this report would be useful for development of an immunodiagnostic kit for the measurement of human AFP concentration.
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G102 Monoclonal Antibody-Based Enzyme-Linked Immunoassay for Human α-Fetoprotein

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α-fetorprotein(AFP) has been a useful marker in the diagnosis and monitoring of certain types of cancer as well as screening for neural tube defects. In the present study, it was attempted to produce anti-human AFP monoclonal antibody and to develop an immunoassay for the measurement of AFP in human plasma and amniotic fluid. Monoclonal antibody was prepared by employing the hybridoma technology. ELISA and immunoblotting showed that AFP was highly specific, reacting with only AFP-containing sample. Standard curve was obtained by using purified AFP and monoclonal antibody, and the working range was 20-2,000ng/ml. The precisions of intrassay and interassay were 5.4%(CV) and 9.0%, respectively. These results indicate that the assay would be useful for the future development of an immunodiagnostic kit for the measurement of AFP concentration.
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