

Evaluation of the proliferative potential of T cells from hepatitis B vaccinated individuals

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Hepatitis B virus (HBV) infections are a world wide public health problem. The virus causes acute and chronic inflammatory liver diseases and hepatocellular carcinoma. Vaccination is of major importance to control and prevent hepatitis infections. Individuals are protected against infection following seroconversion when HBV specific antibodies are measurable in serum samples. Approximately 5 % of all HBV vaccine recipients do not develop detectable HBV-specific antibodies and are consequently considered as non-responders to the vaccine. However, it is unknown whether these individuals are protected against infection. The present study focus on evaluation of the proliferative potential of T cells from HBV vaccinated individuals (responders and non-responders). The study group consisted of 60 healthy individuals, divided into two groups based on the age of the recipients when they received their standard course of HBV vaccination. One group contained individuals below 35 years, and the other group contained individuals above 55 years. Additionally, the vaccine recipients were divided into subgroups according to the time from vaccination to testing (1-6 years). The study is specifically focused on lymphocyte proliferation in response to anti-CD3 and anti-CD28 stimulation. As the expression of CD3 and CD28 decline with age we hypothesize that a decline in the proliferative potential is effectuated. By use of flow cytometric assays the proliferation of CD4 and CD8 T cell subsets are correlated with CD3/CD28 expression and HBV specific antibody titers.