

## Expression of Alpha-Fetoprotein Monoclonal Antibody in Transgenic Rice Cell Suspension Culture

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### Abstract

Alpha-fetoprotein(AFP) is a well-known molecular marker indicating the development of cancer as well as fetal abnormalities and hepatocellular carcinoma(HCC). Accordingly the measurement of serum AFP is important for the diagnosis of HCC and other abnormality. Anti-AFP monoclonal antibody(McAb) is glycoprotein with a molecular mass of about 110kDa. Anti-AFP McAb react with AFP expressed by certain tumors, HCC, and germ cell tumors. AFP assay kit were commonly used for diagnostic detection. So production of Anti-AFP McAb for development of immunodiagnostic kit were performed. In this report, we cloned immunoglobulin genes of Anti-AFP McAb, as F(ab')<sub>2</sub>, constructed an plant expression vector, introduced into the calli of rice (*Oriza sativa* L.) by particle bombardment-mediated transformation. Anti-AFP McAb expressed in plant cell, secreted into plant suspension cell culture medium. Regulated gene expression and secretion of Anti-AFP McAb from this vector accomplished using the promoter, signal peptide, and terminator from a rice alpha-amylase gene *Amy3D*. The *RAmy3D* gene is highly expressed under condition of sugar starvation. The Anti-AFP McAb was expressed from the transgenic rice cell suspension culture on the sugar-free medium. We observed expression and secretion of assembled AFP Ab in transgenic rice suspension culture by Western blot analysis.

### Reference

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