

Tumorigenesis of NIH3T3 cells induced by the exogenously over-expression of the novel tumor antigen OVA66

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The tumor associated antigen OVA66 which is firstly defined by serological analysis of human ovary cancer of recombinant cDNA expression library, has been demonstrated to be highly expressed in the majority of malignant tumors. We constructed a eukaryotic expression vector pFlag-OVA66 to establish an OVA66 stably over-expressed mouse fibroblast NIH3T3 cell line. The OVA66 over-expressed NIH3T3 cells exhibited several significantly malignant changes, the S and G2/M phase was markedly increased whereas the G1/G0 phase was decreased in the total cell cycle, indicating that the over-expression of OVA66 is able to promote cell cycling and proliferation. MTT and colony formation assay validated that OVA66 promotes the cell growth and colony formation in vitro. NIH3T3 cells with the over-expression of tumor antigen OVA66 displayed more resistance to the cell apoptosis induced by 5-FU. In vivo assay of the tumor xenograft studies in nude mice revealed the OVA66 over-expressed NIH3T3 cells were capable of forming tumors in the nude mice compared to the NIH3T3-mock cells with low expression of OVA66. Analysis of the phosphorylation of AKT and ERK1/2 stimulated with serum indicated a hyper activation of ERK1/2 MAPK and PI3K/AKT pathway in OVA66 stably over-expressed NIH3T3 cells. The results suggesting that OVA66 as a novel tumor antigen with its strong tumorigenic ability might be a novel target for the early detection, prevention and treatment of tumor in the future.

Biography:

Ge Hai-liang is a professor of Department of Microbiology and Immunology, Shanghai Jiao Tong University School of Medicine. He graduated from Shanghai Second Medical University in 1977 majoring in medicine. Then he obtained the Master Degree in Nuclear Medicine of Ruijin Hospital, Shanghai Second Medical University in 1985 and got the Doctor Degree in Immunology of Shanghai Second Medical University in 1991. He worked on research as a postdoctoral fellow in the Department of Microbiology and Immunology, University of California, San Francisco, U.S.A. from 1992 to 1995. In 1998 and 2002, he studied in School of Medicine, University of Michigan and School of Medicine, University of Pittsburgh, U.S.A. as a visiting professor respectively.