Expression of sTGFbetaRII-Fc-Jun from recombinant vaccinia virus

TGFß has a biphasic role in tumorigenesis. In early phases it acts as tumor sup-pressor. However, in late phases when cells have escaped selectively from the antimito-genic response of TGFß, it may act as a promoter of tumor progression and invasion. One way of control tumor formation and progression is blocking of TGFß signalling pathways in late phases of tumorigenesis.
We have constructed recombinant vaccinia virus P13 expressing soluble TGFbeta type II receptor fused with the Fc fragment of IgG1 and with Jun fragment (sTbetaRII-Fc-Jun). This sTbetaRII-Fc-Jun is supposed to increase the effect of antitumor vaccinia virus vaccine expressing SigE7LAMP, which is investigated for the treatment of the HPV-16 associated cervical cancer.
Binding of sTbetaRII-Fc-Jun to protein G were tested by SDS-PAGE and by im-munoblotting. We found that Jun fragment and sTbetaRII fragment do not block Fc bind-ing site for protein G.
sTbetaRII-Fc-Jun was characterised using SDS-PAGE and immunoblot analysis. We observed that the amount of sTbetaRII-Fc-Jun was higher in cell supernatans of in-fected cells in comparison to cell lysates. In cell lysates we observed higher amount of sTbetaRII than sTbetaRII-Fc-Jun. The expression of sTbetaRII-Fc-Jun was stronger under the control of E/L promoter than under the control of H5 promoter.
The T cell response was determined by ELISPOT-IFN-gama assay. We observed T cell response against E7 and VACV antigen induced in mice by immunization with P13-SigE7LAMP-H5-sTbetaRII-Fc-Jun and P13-SigE7LAMP-E/L-sTbetaRII-Fc-Jun.
We did not observe the effect of sTbetaRII-Fc-Jun coexpression on the therapeutic anti-tumor effect of immunization with P13-SigE7LAMP-TK-.