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Oral presentation

Exploiting the activity of VP22 to enhance the delivery of antigens encoded by DNA vaccine plasmids

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Herpes simplex virus type 1 (HSV-1) virion protein VP22 possesses the remarkable ability to engage in intercellular trafficking where VP22 is exported from the cell in which it is synthesized and penetrates surrounding cells. Previous data indicates that it is useful for vaccine development by improving the delivery of immunogenic proteins. We constructed plasmids encoding VP22 fused to either influenza virus NP or HIV gag and tested whether such heterologous fusion proteins were capable of intercellular trafficking or enhanced antigen delivery, both in vitro and in vivo. To analyze intercellular trafficking, culture media from transfected monolayers were added subsequently to untransfected cells and uptake of the fusion protein was examined by immunofluorescence. We found that the VP22-NP fusion protein was localized in the cytoplasm of transfected cells and was efficiently transported to recipient cells. Results from similar assays conducted with VP22-gag fusion protein will be presented. In addition, expression and immunogenicity of plasmids encoding the VP22-NP and VP22-gag fusions following inoculation in Balb/C mice will be presented.