Abstract

Development of an Adjuvanted Plasmid DNA HSV-2 Vaccine for Prophylactic and Therapeutic Applications


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Infection with herpes simplex virus type 2 (HSV-2) results in latency in ganglia of infected individuals. To prevent primary infection and reduce viral latency, mice were vaccinated three times with 0.1 or 100µg plasmid DNA (pDNA) expressing gD, formulated with Vaxfectin®. Vaxfectin®-formulated pDNA at 100µg had no detectable gD DNA in DRG, while mice vaccinated with 100µg gD pDNA at 0.1µg showed higher antibody levels. Moreover, 70% of mice vaccinated with Vaxfectin®-formulated pDNA at 100µg had no detectable gD DNA in DRG, while mice vaccinated at 0.1µg were more likely to have undetectable HSV-2 genomes in DRG (P<0.05). These results show that even for doses of 0.1-100µg of pDNA, Vaxfectin®-formulated pDNA can prevent latent infection in the DRG in mice. The DNA vaccine can also reduce HSV-2 lesion recurrence and viral shedding in a therapeutic setting.

Further studies should continue to define the final vaccine for clinical development.

References


