ABSTRACT

Described herein is a method of preventing or treating a disease in a mammalian subject, comprising administering to the subject who is in need thereof an effective dosage of a pharmaceutical composition comprising a virus like particle (VLP) comprising: an alphavirus replicon comprising a recombinant polynucleotide, wherein the polynucleotide comprises a sequence encoding both subunits of a human class II major histocompatibility antigen, a retroviral gag protein, and a fusogenic envelope protein, wherein the VLP does not contain an alphavirus structural protein gene.