SUMMARY

[0009] The present disclosure relates to immunogenic compositions comprising a varicella zoster virus surface (VZV) glycoprotein E antigen and a toll-like receptor 9 (TLR9) agonist, such as an oligonucleotide comprising an unmethylated cytidine-phospho-guanosine (CpG) motif. The immunogenic compositions are suitable for stimulating an immune response against VZV in individuals in need thereof.

[0009a] In one aspect, the present disclosure refers to an immunogenic composition, comprising: a varicella zoster virus (VZV) glycoprotein E (gE) antigen and a toll-like receptor 9 (TLR9) agonist, wherein the TLR9 agonist is an oligonucleotide of from 10 to 35 nucleotides in length comprising an unmethylated cytidine-phospho-guanosine (CpG) motif.

[0009b] In one aspect, the present disclosure refers to a kit comprising: i) the immunogenic composition disclosed herein, and ii) instructions for administration of the immunogenic composition to stimulate an immune response against the VZV gE antigen in the mammalian subject.

[0009c] In one aspect, the present disclosure refers to a kit comprising: i) first composition comprising a varicella zoster virus (VZV) glycoprotein E (gE) antigen; ii) a second composition comprising a TLR9 agonist; and iii) instructions for mixing the first composition with the second composition to prepare an immunogenic composition.

[0009d] In one aspect, the present disclosure refers to use of the immunogenic composition disclosed herein in the manufacture of a medicament for stimulating an immune response against varicella zoster virus (VZV) in a mammalian subject.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1A shows the levels of anti-VZV gE-reactive IgG in sera of recipients of a first dose (prime) of a shingles vaccine and control recipients (CTL and LAV). FIG. 1B shows the levels of anti-VZV gE-reactive IgG in sera of recipients of a first dose (prime) and a second dose (boost) of a shingles vaccine and control recipients (CTL and LAV).

[0011] FIG. 2A-2C show gE-antigen induced, IL-2 and/or IFN-γ secreting CD4+ T cells of recipients of a first dose (prime) and a second dose (boost) of a shingles vaccine and control recipients (CTL and LAV).

[0012] FIG. 3A-3B show gE-antigen induced, IL-2 or IFN-γ secreting CD154+, CD4+ T cells of recipients of a first dose (prime) and a second dose (boost) of a shingles vaccine and control recipients (CTL and LAV).

General Techniques and Definitions

[0013] The practice of the present disclosure will employ, unless otherwise indicated, conventional techniques of molecular biology (including recombinant techniques), microbiology, cell biology, biochemistry and immunology, which are within the skill of the art.

[0014] As used herein and in the appended claims, the singular forms “a”, “an”, and “the” include plural references unless indicated otherwise. For example, “an” excipient includes one or more excipients.

[0015] The phrase “comprising” as used herein is open-ended, indicating that such embodiments may include additional elements. In contrast, the phrase “consisting of” is closed, indicating that such embodiments do not include additional elements (except for trace impurities). The phrase “consisting essentially of” is partially closed, indicating that such