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(54) Title: PROCESS FOR DESIGNING A RECOMBINANT POXVIRUS FOR A THERAPEUTIC VACCINE

(57) Abstract: The present invention generally relates to a process for designing a recombinant poxvirus for a therapeutic vaccine, i.e. personalized cancer vaccine, said recombinant poxvirus comprising one or more expression cassettes, each for expression of a fusion of a plurality of peptides, i.e. neopeptides, characterized in that it comprises performing by processing means (11) of a server (1) the steps of : (a) selecting a first subset of candidate peptides, wherein said peptides present transmembrane scores below a TMS threshold; (b) determining an optimal distribution of the candidate peptides from said first subset to the expression cassette(s) among a plurality of possible distributions, wherein said optimal distribution presents, if there are at least two expression cassettes, the lowest range between the hydropathy scores of at least two expression cassettes; (c) for each expression cassette, determining an optimal slot allocation of the candidate peptides as function of cassette slot occupancy rule so as to select the peptide fusion with the lowest TM score; (d) determining a DNA transfer sequence comprising the nucleotide sequence of the one or more expression cassette(s) for generation of said recombinant poxvirus.



WO 2021/130210 A1