

MODIFICATION OF RECOMBINANT ADENOVIRUS WITH IMMUNOGENIC PLASMODIUM CIRCUMSPOROZOITE PROTEIN EPITOPES

ABSTRACT

The present disclosure relates to adenovirus protein modifications to augment immune response to a transgene of a recombinant adenovirus and to circumvent pre-existing anti-adenovirus immunity. Some embodiments are directed to a recombinant adenovirus derived from a recombinant adenovirus plasmid vector, wherein the recombinant adenovirus plasmid vector comprises a nucleotide sequence encoding a Plasmodium circumsporozone protein, or antigenic portion thereof, operably linked to a heterologous promoter and a modified capsid or core protein, wherein an immunogenic epitope of Plasmodium circumsporozone is inserted into or replaces at least part of a capsid or core protein. Other embodiments are directed to a pharmaceutical composition or a malaria vaccine composition comprising a recombinant adenovirus according to the above embodiments. Further embodiments include a method of treating, preventing, or diagnosing malaria, comprising administering a therapeutic amount of the pharmaceutical composition or malaria vaccine composition in accordance with the above embodiment.

Fig. 1