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(54) Title: METHODS AND COMPOSITIONS FOR INDUCING IMMUNE RESPONSES AND PROTECTIVE IMMUNITY BY PRIMING WITH ALPHAVIRUS REPLICON VACCINES

(57) Abstract: The inventive subject matter relates to an immunogenic composition and method of immunizing a subject against malarial disease comprising administering to the subject a priming immunization preparation comprising alphavirus replicons expressing a gene encoding a malarial antigen or combination of malarial antigens and subsequently administering to the subject a boosting immunization preparation comprising the malarial antigen(s) or an expression system containing the antigen(s). The inventive composition and methods result in a robust induction of humoral and cellular immune system responses, including CD8⁺, CD4⁺ and antibody responses.



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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/36115

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8): A61K 39/00(2006.01),39/245(2006.01),47/44(2006.01)
C12N 15/00(2006.01)

USPC: 424/184.1,201.1,202.1,286.1;435/320.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/184.1,201.1,202.1,286.1;435/320.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST (US-PGPUB; USPAT; EPO; JPO; DERWENT); PUBMED

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DEGANO ET AL. Gene gun intradermal DNA immunization followed by boosting with modified vaccinia virus Ankara: enhanced CD*+ T cell immunogenicity and protective efficacy in the influenza and malaria models. Vaccine. 2000. Vol. 18, pages 623-632.	1-26
Y	SEDEGAH ET AL. Persistence of Protective Immunity to Malaria Induced by DNA Priming and Poxvirus Boosting: Characterization of Effector and Memory CD8+-T-Cel Populations. Infection And Immunity. July 2002. Vol. 70, No. 7. pages 3493-3499.	1-4, 6, 8, 9, 11-18, 20-22, 24-26
Y	RAYNER ET AL. Alphavirus vectors and vaccination. Rev. Med. Virol. 2002. Vol. 12, pages 279-296.	1-4, 6, 8, 9, 11-18, 20-22, 24-26
Y	SCHNEIDER ET AL. A prime-boost regimen using DNA followed by recombinant modified vaccinia virus Ankara induces strong cellular immune responses against the Plasmodium falciparum TRAP antigen in chimpanzees. Vaccine. 2001, Vol. 19. Pages 4595-4602.	5, 7, 10

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☐ See patent family annex.

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GILBERT ET AL. Enhanced CD8 T cell immunogenicity and protective efficacy in a mouse malaria model using a recombinant adenoviral vaccine in heterologous prime-boost immunisation regimes. Vaccine, 2002. Vol. 20, pages 1039-1045.	19, 23