

PubMed

**Format:** Abstract

Full text links



Methods Mol Biol. 2015;1325:289-302. doi: 10.1007/978-1-4939-2815-6_22.

Vaccination Using Gene-Gun Technology.

Bergmann-Leitner ES¹, Leitner WW².

Author information

¹Malaria **Vaccine** Branch, Walter Reed Army Institute of Research, Silver Spring, MD, 20910, USA.
elke.s.bergmannleitner.civ@mail.mil.

²National Institute of Allergy and Infectious Diseases, National Institutes of Health (NIH), Bethesda, MD, 20892, USA. wleitner@mail.nih.gov.

Abstract

DNA **vaccines** against infection with Plasmodium have been highly successful in rodent models of malaria and have shown promise in the very limited number of clinical **trials** conducted so far. The **vaccine** platform is highly attractive for numerous reasons, such as low cost and a very favorable safety profile. **Gene gun** delivery of DNA plasmids drastically reduces the **vaccine** dose and does not only have the potential to make **vaccines** more accessible and affordable, but also simplifies (a) the testing of novel antigens as **vaccine** candidates, (b) the testing of antigen combinations, and (c) the co-delivery of antigens with molecular adjuvants such as cytokines or costimulatory molecules. Described in this chapter are the preparation of the inoculum (i.e., DNA plasmids attached to gold particles, coating to the inside of plastic tubing also referred to as **gene gun** "bullets" or cartridges), the **gene gun** vaccination procedure, and the challenge of mice with Plasmodium berghei parasites to test the efficacy of the experimental **vaccine**.

KEYWORDS: Biolistic **vaccine**; DNA **vaccines**; **Gene gun**; Immunization; Particle-mediated epidermal delivery

PMID: [26450396](#) DOI: [10.1007/978-1-4939-2815-6_22](#)

[PubMed - indexed for MEDLINE]

MeSH Terms, Substances

LinkOut - more resources

PubMed Commons

[PubMed Commons home](#)

0 comments

[How to join PubMed Commons](#)