

A TRANSMISSION BLOCKING VACCINE AGAINST RODENT MALARIAS

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By immunising mice with gametes, the sexual stages of *Plasmodium yoelii*, it was possible to block completely the transmission of a subsequent challenge infection to *Anopheles stephensi* mosquitoes.

The vaccine contained formalin-fixed male and female gametes and some asexual blood stage parasites as contaminants. A single dose of the vaccine containing 2×10^7 male gametes given intravenously is effective in blocking completely the transmission of challenge infection. Effective immunity could also be produced by the intramuscular route of vaccination; immunity was found to last at least 6 months. Antibodies acting on extracellular gametes within the mosquito gut appear to be responsible for blocking transmission.

The gamete vaccine also afforded partial protection against the disease which could have been due to either the presence of asexual blood stage in the vaccine or due to cross protection between gametes and asexual stages. Immunisation with asexual parasites alone showed that this protection was due to the presence of asexual forms as contaminants and that anti-gametes immunity is stage specific.