**Supplementary Figures**

**Fig. S1**

**A screenshot of a computer screen

Description automatically generated with medium confidence**

**Figure S1.** Transgenicsporozoite-neutralizing activity. **(A)** Sera from BALB/c mice immunized with m8∆/AAV1 or RTS,S/AS01 (RTS,S) were tested in transgenic sporozoite neutralization assay. PfCSP-Tc/Pb sporozoites were incubated with control mice sera or immune sera at two serum dilutions (1:5 or 1:50) before addition to HepG2 cells. After 48 h of culture, levels of parasites in HepG2 cell extracts were measured by real-time PCR. Results are shown as percentage relative 18S rRNA copy number. Differences between groups were analyzed using an unpaired *t*-test. \**p* < 0.05, \*\**p* < 0.01, \*\*\*\**p* < 0.0001. **(B)** BALB/c mice, *n* = 2 per group, were inoculated with m8∆/AAV1 or RTS,S to form the immunized groups, and PBS was used for the control group. Four weeks after the final immunization, mice were challenged with 3 × 104 PfCSP-Tc/Pb sporozoites expressing the luciferase gene (PfCSP-Tc/Pb Luc). The mean total photon flux (whole body) from 24–120 h after intravenous administration of PfCSP-Tc/Pb Luc is shown. ROI: region of interest, ND: not detected.

**Fig. S2**

A collage of images of a virus

Description automatically generated

**Figure S2.** Assessment of vaccine efficacy against cerebral malaria. Immunohistochemical staining for ICAM-1 in cerebral vessel endothelia of vaccinated C57BL/6 mice on day 8 after challenge with 1 × 103 Pfs25-PfCSP/Pb sporozoites. **(A)** Representative images showing ICAM-1 expression in control, m8∆/AAV1 (infected), RTS,S (infected) and almost no ICAM-1 expression in naïve, m8∆/AAV1 (protected), and RTS,S (protected) groups. Scale bar: 50 μm. **(B)** Quantification of ICAM-1-positive vessels across different groups. Data represent the mean number of positive vessels per 20 fields at 400× magnification for each group; error bars denote SEM. Differences between groups were analyzed using unpaired *t*-test. “ns” indicates no significant differences between groups.