

ZIKA RHESUS LETHAL MODEL

Zika Strain PRV ABC58

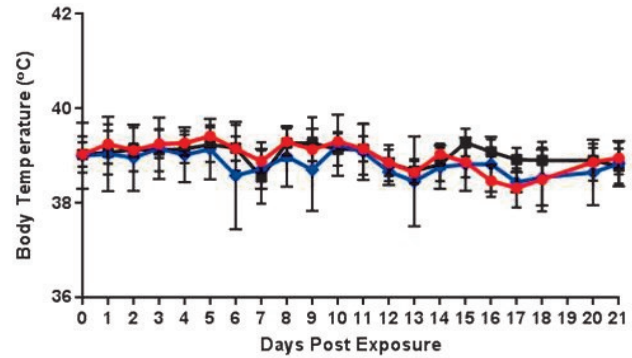


Description

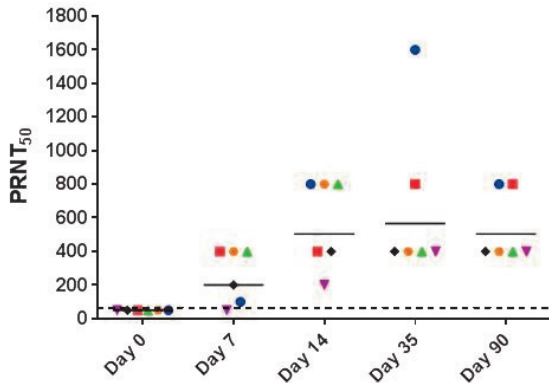
IITRI has developed a rhesus macaque animal model using the Zika PRV ABC59 strain, an isolate of Zika virus from the current outbreak in the Americas. Rhesus macaques (N=18) were inoculated with the Zika 2015 Puerto Rico, strain PRVABC-59 by subcutaneous injection (challenge dose 10^6 PFU, SQ).

Animals were monitored for clinical signs including weight loss, rash, body temperature, and survival, as well as viral load in blood samples, oral swabs and semen samples. Viral titers were determined by micro-neutralization assays and qRT-PCR.

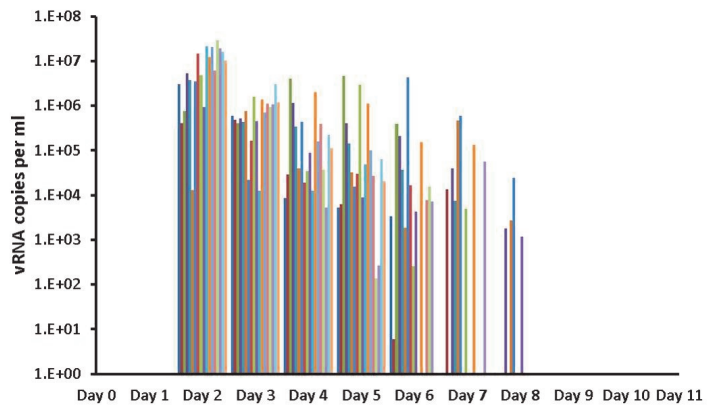
Body Temperatures



Zika Microneutralization Plaque Titers



Zika Viremia



Summary/Conclusions

Rhesus macaques exhibited few clinical signs of infection, much like humans, with no observed change in body weight (data not shown), body temperature or activity levels. Viral genomes were easily detected by qRT-PCR in extracts of blood samples for as much as a week after infection. Adaptive immune response offers protection from future reinfection, as shown by microneutralization assays.

Rhesus macaques infected by the contemporary ZIKV strain partly recapitulated some clinical features and viral kinetics in ZIKV-infected patients. This rhesus macaque model is an important new non-human primate tool for the evaluation of potential antivirals and vaccines. to combat the emerging Zika outbreak.

