

Disease Progression Patterns of SHIV-KB9 in Rhesus Macaques of Chinese Origin in Comparison with Indian Macaques¹

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Objective To develop a model of SHIV-KB9/Chinese origin rhesus (Ch Rh) macaques for vaccine research and to compare the pathogenesis of SHIV-KB9 in Ch Rh macaques with that reported in Indian rhesus (Ind Rh) macaques. **Methods** Seven mamu-A*01 negative Ch Rh macaques were inoculated intravenously with 1-10000 MID₅₀ of SHIV-KB9. The monkeys were monitored for viral load, CD4, CD8, SHIV-specific antibody and virus genetic variation. The results were compared with those previously observed in Ind Rh macaques. **Results** As compared to that observed in Ind Rh macaques, SHIV-KB9 in Ch Rh macaques displayed three identical disease progression patterns. However, the primary pattern was not identical between the two subspecies. The level of plasma viremia differed in SHIV-KB9-infected Ch Rh macaques which exhibited different outcomes from those in Ind Rh macaques. Generally, the values of viral load and the maintenance of CD4⁺ T cells were associated with humoral responses. Otherwise, the viral genetic distances (divergence, diversity) were larger in animals (M419, M425) with their CD4⁺ T cells profoundly depleted. **Conclusion** The model of SHIV-KB9/Ch Rh macaques displays a relatively slow progression to AIDS compared with Ind Rh macaques, which may more accurately reflect the potential of candidate vaccines in humans.

Key words: SHIV-KB9; Rhesus macaque; Subspecies; Viral load; CD4/CD8 ratio; Antibody titer; Gene variation

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