

Thesis Title Memory T Cell Response to Dengue Virus
 in Immune Individuals

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ABSTRACT

Lymphoproliferation assays were developed to measure memory T cell responses to dengue virus in immune individuals. Four serotypes of parental strains of dengue virus vaccines cultured in LLC-MK2 cells were used to prepare live dengue viruses and sonicated dengue antigens. These antigens were used to stimulate memory T cells in dengue-immune subjects.

The developed lymphoproliferative assays were evaluated in 11 subjects who had serotype specific neutralizing antibody to dengue or JE viruses (gr I), in 6 subjects who had dengue virus crossreactive neutralizing antibody (gr II) and in 10 subjects who had flavivirus crossreactive neutralizing antibody (gr III).

Dengue specific memory T cell responses were detected in 7/11, 6/6, and 9/10 of the subjects in gr I, gr II and

gr III, respectively. The patterns of responses in each individual to the live viruses were different from those to sonicated antigens in all 3 groups. The magnitude of the response in gr I and gr II were low as compared to those in gr III. In addition, the responses in gr III were more crossreactive than the other 2 groups which exhibited similar patterns of responses. There were some correlation between the serotype specificity of memory T cell responses and the serotypes of neutralizing antibody in subjects who had serotype specific neutralizing antibody to dengue virus. However, no correlation was observed between the magnitude of memory T cell response and the level of HI antibody but may correlate with the degree of crossreactivity in HI antibody patterns in these individuals.

This study provided the technology and background informations for future studies.