

## Dengue Virus Isolation from Patients and Mosquitoes

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**OBJECTIVE :** To provide dengue viruses, isolated from patients and *Aedes aegypti* mosquitoes, for the study of dengue virus markers.

**BACKGROUND :** Previous studies (1) have demonstrated that the homes of dengue patients provided the most abundant sites of dengue infected *A. aegypti* mosquitoes. Mosquitoes collected from patient's homes were used to isolate virus for dengue virulence studies. This collection also expanded our knowledge of the relative densities of dengue vectors, both infectious and uninfected, in the vicinity of dengue patients.

**METHODS :** Indoor day light collections of adult mosquitoes, using the pyrethrin spray knockdown techniques, were made in the homes of clinical patients who were admitted to the Bangkok Children's Hospital dengue hemorrhagic ward. Mosquitoes from each house were then identified and frozen in suitable size pools for virus isolations. A direct and delayed plaque technique was employed for virus isolation and viruses were identified by a plaque reduction neutralization test.

**RESULTS :** Forty-nine patient homes were visited by an entomology team between the 20th of June and 1 December 1976. Serological studies of patients residing in these houses revealed that only 45 of the 49 patients had dengue infections. In the 45 houses of these laboratory diagnosed dengue patients a total number of 281 *A. aegypti* were collected (average mosquitoes per house, 6.2, range 0-50 mosquitoes). There were 161 engorged mosquitoes, (average per house 3.6, range 0-20) and 120 unengorged mosquitoes (average per house 7.2, range 0-29). Of the 45 houses studied, ten provided engorged mosquitoes and 28 harbored both engorged and unengorged mosquitoes. Five houses revealed only unengorged mosquitoes, and two houses had no mosquitoes at all. For each house engorged and unengorged pools of mosquitoes were submitted for isolation. From the mosquitoes collected from the 43 houses of the DHF patients there was one isolation made. It was made from an unfed mosquito pool collected one day after a resident of the house was admitted to the hospital. Besides the isolation of dengue 2 from the mosquito (BM-50-76) dengue two was also isolated from the patient (D76-015). This dengue 2 mosquito isolate has been used as a Southeast Asian dengue 2 wild type strain in vaccine studies.

Further collections of this type are probably warranted if done on a large scale in association with an intensive study of dengue virulence markers or mosquito ecology.

REFERENCE :

1. Gould, D.J., Grossman, R.A., and Smith, T.J., 1970. Bangkok Dengue Vectors. SEATO Medical Research Laboratory Annual Report. pp. 25.