

TRANSVENEREAL TRANSMISSION OF DENGUE VIRUS SEROTYPE-3 IN *Aedes aegypti* UNDER LABORATORY CONDITION

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Abstract. The study sought to demonstrate dengue virus serotype-3 (DENV-3)-infected male *Aedes aegypti* mosquitoes were capable of viral transmission transvenereally to uninfected female *Ae. aegypti* owing to males' polygamous behavior. One-day-old male *Ae. aegypti* ($n = 150$) were intrathoracically injected with 1.5-2 μ l aliquot of DENV-3 suspension and reared for 3, 5, 7, 10, 12 and 14 days before each surviving male was individually kept for seven days with uninfected female *Ae. aegypti* ($n = 10$ female). Then, each male mosquito was assayed for presence of DENV-3 by semi-nested RT-PCR, while female mosquitoes from each mating were separately fed on murine blood, individually maintained for 14 days to allow oviposition. Female mosquitoes kept with a particular injected male were pooled into egg- and non-egg-laying groups, and pooled mosquitoes from the former group were assayed for the presence of DENV-3. Only 34 injected males survived for mating, of which 10 were tested positive for DENV-3. Minimum infection rate [(number of pools of DENV-3-positive female mosquitoes mated to mosquitoes from the same post-infection group/number of assayed females from the same group) \times 1,000] was able to be calculated for females mated to 5- and 14-day post-injection males (0.090 and 0.111, respectively). The study shows *in vitro* DENV-3-infected male *Ae. aegypti* were capable of transvenereal viral transmission to uninfected females, but the relevance of this finding in the field remains to be investigated.

Keywords: *Aedes aegypti*, dengue virus serotype-3, intrathoracic injection, polygamous behavior, transvenereal transmission

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