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DIFFERENTIAL PROLIFERATION OF WOLBACHIA INFECTIONS IN AEDES MOSQUITO CELL LINES

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The cell lines of *Aedes albopictus* (C636) obtained at NIMHANS, Karnataka, India are maintained in incubators with M&M insect cell culture medium and BSA to establish *Wolbachia* infections. The cell lines were inoculated with *Wolbachia* (A, B and AB super groups) and the strength of the infection was calculated based on the perpetuation of the cells in the *in vitro* medium. The comparison between control and infected cell lines suggests a two-fold decrease in infected cells reaching confluence. The inoculum strength differs from the source of *Wolbachia* isolated from different insect hosts. *Wolbachia* extracts with double infections (AB) are highly virulent than single infections. Among single infections, *Wolbachia* B super-group is more virulent than A super-group. Further, it was observed that *Wolbachia* derived from *Exorista sorbillans*, *Aedes albopictus*, *Trichogramma japonicum* has greater virulence and cell lines can be infected within few passages. *Wolbachia* isolated from Talicada nyseus did not induce any significant effect on mosquito cell lines. The findings of the current study append the database of potential non-native *Wolbachia* strains that can be introduced in mosquitoes for expression of novel phenotypes. Recent findings reports increased virulence of pathogenic West Nile Virus, when confounded with native *Wolbachia* strains in mosquitoes. Thus screening of alternative *Wolbachia* strains that could be maintained in mosquito cell lines and establishing a *Wolbachia* strain pool for mosquito trans-infection is of significant importance.

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