EFFECTS OF RIBAVIRIN AND HYDROXYUREA ON ORAL INFECTION OF Aedes aegypti (L.) WITH DENGUE VIRUS

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Abstract. This study was conducted to determine the inhibitory effects of ribavirin and hydroxyurea on dengue virus replication in Aedes aegypti mosquitoes. Female Ae. aegypti mosquitoes were infected with dengue-2 virus and fed ribavirin at a dose of 0.3 mg/ml and/or hydroxyurea at a dose of 6 mg/ml via artificial membrane feeding technique. The virus in infected mosquitoes was isolated using C6/36 cell culture. Peroxidase-antiperoxidase (PAP) staining was used to detect dengue-infected C6/36 cells and to quantify the level of infection by determining the presence of infected cells. In mosquitoes treated with ribavirin alone, hydroxyurea alone or both drugs in combination had reductions in dengue infection rates of 87.72, 89.47 and 95.61%, respectively. The mortalities of female Ae. aegypti mosquitoes fed with these drugs were significantly higher than the control. Ribavirin also had an inhibitory effect on the fecundity of female Ae. aegypti mosquitoes.

Keywords: Aedes aegypti, inhibitory effect, ribavirin, hydroxyurea, dengue virus