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EDITORIAL NOTE
Science and technology to combat dengue virus

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The present issue of the Anais da Academia Brasileira de Ciências includes peer-reviewed articles contribu scientists that participated in the workshop "Science and Technology to Combat Dengue Virus" promoted Brazilian Academy of Sciences (June 5-6, 2008). The Dengue virus (DENV) is a member of the virus *Flaviviridae* and is transmitted to humans through the bite of the mosquito *Aedes aegypti* and, more rarely, by *albopictus*. Dengue virus is the most common arthropod-borne disease in the world. Global epidemics of have occurred, in part, due to a reduced commitment with regard to the control of mosquitoes coupled with factors, such as increase of population in urban areas.

According to the World Health Organization, more than 50 million cases of infection caused by DENV are est to occur annually. Dengue is mainly found in the tropics because the mosquitoes require a warm climate. The m of deaths that result from dengue infection is due to Dengue Hemorrhagic Fever (DHF) and Dengue Shock Syn (DSS). It is believed that sequential infection by multiple serotypes of DENV can lead to the development o and it has been estimated close to 500 thousand cases per year worldwide. The Dengue virus has 4 subtyp share about 60-80% homology among each other. The major difference lies in the proteins present in the mem envelope. Infection with a particular DENV subtype leads to the development of an immune response. Ho when an individual is infected with another subtype, the immune response might not work perfectly, which m the antibodies to bind to the surface proteins but with failure to inactivate the virus. It is believed that DHF result from an antibody-dependent enhancement (ADE), when the viral particles coated with antibodies are by macrophages, followed by the release of cytokines that cause the endothelial tissue to become permeable, results in hemorrhagic fever and fluid loss from the blood vessels. The basic treatment of DHF is to prevent loss, which usually requires hospitalization in intensive care units. This poses a big burden to the health sys countries affected by the disease. Because a tetravalent vaccine is not available yet, the most effective prev measures lie in mosquito control.

Brazil has been affected periodically by DENV outbreaks. The workshop on Dengue virus promoted by the ian Academy of Sciences had the participation of the leading groups from different states of the country w on mosquito control, diagnostics, vaccine development, epidemiology and the clinics of the disease. The published in this issue cover the development of molecular markers to predict DHF (Calzava-Silva et al. 200 strategies to vaccine development (Dhalia et al. 2009) and entomological surveillance (Regis et al. 2009).

DHALIA R, MACIEL JR M, CRUZ FSP, VIANA IFT, PALMA ML, AUGUST T AND MARQUES JR ETA. 2009. Membrane and envelope virus proteins co-expressed as lysosome associated membrane protein (LAMP) fused antigens: a potential tool to develop DNA vaccines against flaviviruses. An Acad Bras Cienc 81: 663–669.

REGIS L, SOUZA WVS, FURTADO AF, FONSECA CD, SILVEIRA JR JC, RIBEIRO JR PJ, MELO-SANTOS MAV, CARVALHO MS AND MONTEIRO AMV. 2009. An Entomological Surveillance System Based on Open Spatial Information for Participative Dengue Control. An Acad Bras Cienc 81: 655–662.