amplification steps without the risk of generating false-positives. This single-tube RT-PCR procedure was used to identify dengue serotypes circulating during an epidemic in Nicaragua in 1995. In order to use this assay to detect dengue virus in mosquitoes, an extraction procedure was developed which detects viral RNA in pools of up to 50 mosquitoes with no inhibition or degradation and with maximal sensitivity. This assay should be a practical tool for use in endemic countries for surveillance and epidemiology of dengue viruses.

594 IDENTIFICATION OF RECEPTORS FOR DENGUE VIRUS IN *AEDES AEGYPT*. Muñoz M, Esquinca H, Tovar, and Das P*. Department of Genetics and Molecular Biology. CINVESTAV-IPN. Mexico, D.F. Mexico.

Dengue and dengue haemorrhagic fever are important diseases of humans throughout the tropical and subtropical countries of the world. According to rough estimate, several millions cases of dengue fever occur annually in the world. In Mexico, 18000 cases were reported last year. The infection caused by the virus typically results in an acute, self limiting and febrile illness. One of the subjects which is still not understood fully is the nature of viral receptors for dengue virus. To have an insight into the problem, preliminary studies were conducted to identify and characterize the receptors of dengue virus in mid-gut of mosquitoes as well as in established cell lines. Earlier work on the specific interaction of polyclonal antibodies raised against the *Ae. aegypti* middle gut has shown that the antibodies can arrest the entrance of virus to the C6/36 cell line of *Ae. albopictus*. Futhermore, overlay and western blot studies using the biotinylated DEN2 virus and the above antibody showed at least five common bands at 80, 79, 67, 65 and 19 kDa of plasma membrane proteins of C6/36 cell line. To isolate and characterize the specific receptors for each serotype of dengue virus (serotype 1 to 4), one step affinity column chromatography was carried out. CBr activated Sepharose Cl 4B were tagged with each serotype of virus using the manufacturer's protocol. Once the column was ready, both C6/36 and *Ae. aegypti* mid-gut extract were labelled with $I^{125}$ using the chloramine T method. Labelled C6/36 and middle gut proteins were then loaded onto each serotype column. After washing the bound proteins were eluted with elution buffer. Then eluted proteins were evaluated by 10% SDS PAGE. Two prominent bands at 80 and 65 kDa were observedwith all the serotypes. Moreover, studies with the lactoperoxidase labelled C6/36 cells and their interaction with antibody to eluted proteins as well as with different dengue serotypes showed similar bands at 80 and 65 kDa. All these observations clearly suggest the importance of these polypeptides in the binding of virus to the target cell.

595 SYLVATIC VECTORS OF DENGUE 2 VIRUS IN WEST AFRICA. Diallo M, Fontenille D*, Thonnon J, Traore-Lamizana MT, Hervy JP, Zeller HG, and Digoutte JP. Institut Pasteur, Dakar, Senegal; ORSTOM, Dakar, Senegal; ORSTOM, Montpellier, France; and Institut Pasteur, Antananarivo, Madagascar.

Outbreaks of dengue 2 virus are rare in West Africa, despite frequent isolations of the dengue 2 virus from sylvatic *Aedes*. In forest galleries of Kedougou (Eastern Senegal) the transmission cycle involved monkeys and *Aedes furcifer*, *Ae. taylori* or *Ae. luteocephalus*. Mosquitoes were captured during the rainy season of each year since 1972. A total of 250,148 *Aedes* from the *furcifer-taylori* group (8244 pools), and 100,469 *Ae. luteocephalus* (8244 pools) were tested for the presence of virus. Dengue 2 virus was isolated in 1974 (1 strain from mosquitoes), in 1981-1982 (215 strains from mosquitoes and 1 from monkey) and in 1989-1990 (62 strains from mosquitoes and 2 from humans). Of the mosquito isolates, 45.4% were obtained from *Aedes furcifer*, 37.0% from *Ae. luteocephalus* and 17.6% from *Ae. taylori*. Isolation of a strain from males of *Ae. taylori* demonstrated the existence of natural vertical transmission. The highest minimum infection rates, were observed in 1981. These were 1.19% in *Aedes furcifer*, 1.42% in *Ae. luteocephalus* and 1.15% in *Ae. taylori*. No strain was isolated from the 11,862 (838 pools) sylvatic *Aedes aegypti* captured in Kedougou. The dengue 2 virus was also isolated from Burkina Faso, Guinea and Cote d'Ivoire (53 strains from *Ae. luteocephalus*, 7 strains from *Ae. africanus*, 1 strain from *Ae. cumminsii*, 3 strains from *Ae. opok* and 6 strains from domestic *Ae. aegypti*. The relationship between the sylvatic and epidemic cycles of dengue 2 remain unknown.

596 FIELD EVALUATION OF CYFLUTHRIN AND MALATHION 96TG ULV SPRAYING AT HIGH-RISE FLATS ON DENGUE VECTORS IN MALAYSIA. Sulaiman S *, Pawanchee ZA, Othman HF, Jamal J, Waheb A, Sohadi AR, Rahman AR, and Pandak A. Department of Biomedical Science, Faculty of Allied Health Sciences, Univerisity Kebangsaan Malaysia; Vector Control Unit, Municipality of Kuala Lumpur, Malaysia; and Department of Parasitology and Medical Entomology, Faculty of Medicine, Univerisity Kebangsaan, Malaysia.

Cyfluthrin (Solfac ULO15®) and malathion 96TG were evaluated against sentinel sugar-fed adults and 1st instar larvae of *Aedes aegypti* in containers at high-rise flats in Malaysia by ULV spraying. The impact of both insecticides was monitored weekly using containers. Both cyfluthrin and malathion 96TG showed adulticidal effects, but cyfluthrin showed more significant larvicidal effect than malathion 96TG ($p<0.05$).

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Disney's Coronado Springs Resort
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