

COMPETITIVE ENZYME LINKED IMMUNOSORBENT ASSAY (C-ELISA) FOR THE DETECTION OF A FLAVIVIRUS SPECIFIC ANTIBODY

ABSTRACT

A competitive enzyme-linked immunosorbent assay (C-ELISA), using flavivirus member specific immunological agents such as flavivirus monoclonal antibodies was developed to detect antibody specific to members of the flaviviruses indicative of exposure to flavivirus. The test is based on a competition for epitope binding on the envelope protein of the flavivirus antigen captured using anti-flavivirus IgA in the presence of flavivirus positive serum. This test has comparable sensitivity specificity and speed to the virus neutralization assay (VNT) and is more reliable than other serological techniques. C-ELISA is a versatile technique, which could have various applications. Slight modifications of this protocol could lead to a C-ELISA-based detection method of secondary infection or one that could be used for serotype specific sero-epidemiological studies and/or vaccine evaluation. The protocol developed for C-ELISA was demonstrated using dengue lysate antigen and dengue specific monoclonal antibody. This can also be used against other flaviviruses and the results for Japanese encephalitis illustrates this.

Figure 1