Use of Recombinant Envelope Proteins for Serological Diagnosis of Dengue Virus Infection in an Immunochromatographic Assay

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Abstract

An immunochromatographic test that incorporates recombinant antigens (Dengue Duo Rapid Strip Test; PanBio, Brisbane, Australia) has recently become commercially available. This assay is performed in 15 min and detects both immunoglobulin M (IgM) and IgG in a capture format. The four recombinant proteins used represent the N-terminal 80% of the viral envelope glycoproteins of dengue viruses 1, 2, 3, and 4, respectively. The sensitivity and specificity of the recombinant-antigen-based assay were 90 and 86%, respectively. The similar diagnostic performance of these antigens to that of enzyme-linked immunosorbent assays using whole dengue virus suggests that they mimic whole dengue viruses in primary structure and epitope conformation. These results suggest that recombinant proteins can be used in diagnostic assays for dengue to overcome safety issues associated with the use of whole virus.

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