

ABSTRACT

Objective: This study sought to investigate the presence of dengue virus binding proteins expressed on the surface of HepG2 cells and to determine if there were serotype specific differences in binding.

Methods: HepG2 cell membrane proteins were extracted and separated by SDS-PAGE, transferred to nitrocellulose membranes and incubated with dengue virus serotypes 2, 3 and 4 under varying hybridization conditions. The positions of dengue virus binding proteins were established with a pan specific anti-dengue virus monoclonal antibody.

Results: Dengue virus binding proteins were seen at approximately 78-80, 90, 98, and 102 kDa for dengue serotype 2, 90, 130 and 182 kDa for dengue serotype 3 and 90 and 130 kDa for dengue serotype 4. Binding of the serotypes 3 and 4 was significantly altered by the hybridization conditions, while serotype 2 was affected to a lesser extent.

Conclusions: The virus overlay assay used here provides further evidence that there is a serotype specific component regulating the entry of the dengue virus into cells. Given that several virus binding proteins are seen for each serotype, multiple proteins may be required to facilitate the entry of the virus into some cell types.