GENE EXPRESSION CHANGES IN HEPG2 CELLS INFECTED WITH DENGUE 2

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Infectious diseases are still the main cause of death in the world. Among these illnesses, one of the most important is Dengue. The clinical manifestations can vary from asymptomatic to a severe infection leading to bleeding and shock. Marked disturbance of liver functions indicating hepatocellular involvement have been reported in infected pacients. These findings sustain the hipotesis that liver is one of the most important sites for DV replication. Our group decided to investigate gene expression changes that occur in hepatocytes after DV serotype 2 infection of HepG2 cells. A microarrray chip containing 10.000 human genes was used to search for genes differentially expressed after infection. From these, twenty were selected for real-time reverse transcriptase PCR assay. So far, PCR confirmed expression alterations of nine of the genes: CR2 (receptor for complement C3Dd), TRAF1 (adapter protein and signal transducer), IFI16 (gamma-interferon inducible protein), ATP1B3 (non-catalytic component of the enzyme ATPase), COL9A2 (Collagen alpha-2 IX), CASP9 (apoptosis-related cysteine peptidase), IL7 (Interleukin-7), LRP10 (low-density lipoprotein receptor) and EDN1 (endothelium-derived vasoconstrictor peptide). Other genes are still being investigated. We intend to identify genes that may contribute to the pathogenesis of dengue so that we can draw a better picture of the mechanisms involved in this disease manifestations.

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