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## Proliferation and activation state of mononuclear cells from dengue patients stimulated with viral peptides

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Dengue disease is caused by a flavivirus and it can be coursed in a variety of clinical forms, in that way, a dengue virus infection could be asintomatic or it could present some symptomatology that could put in risk the patient's life. There is currently no vaccine or treatment versus dengue virus, on the other hand, several studies had proposed that the immune response is implicated in the pathology of dengue virus infection. In a study by Sanchez-Burgos in 2010 were predicted in silico 22 peptides of the dengue virus proteins as potent activators of the immune response. In this work we analyzed the proliferation and activation state of peripheral blood mononuclear cells (PBMCs) from dengue patients stimulated in vitro with mixtures of the viral peptides predicted by Sanchez-Burgos in 2010, the mixtures were designed based on the type of viral proteins. PBMCs were isolated from blood of three patients with dengue fever (DF) and six patients with dengue hemorrhagic fever (DHF) from the HGR-1 hospital of Mexican Social Security Institute in Cuernavaca, Morelos, Mexico. The cells were stimulated during seven days with four mixtures of the viral peptides and then the proliferation and cellular activation were evaluated by flow citometry using CFSE and specific antibodies against CD3, CD19, CD25 and CD69. In general we found a higher level of proliferation and cellular activation of PBMCs in DF patients compared with DHF patients. The mixture of peptides of the viral protein E induce a high expression of CD19 and CD25 while peptides of NS4a and NS4b proteins induce more expression of CD3 and CD69. The immune response to viral antigenic stimuli differs between patients with DF and DHF, suggesting a possible rol of these antigens in the pathology of dengue disease. The peptides of E protein evaluated promote mainly a humoral immune response while the peptides of the proteins NS4a and NS4b activate mainly a cellular immune response. Nowadays we are working with more samples and the results at the end will help us to define if these peptides are or not good activators of the immune response and further studies may show whether these peptides could be used as a vaccine against dengue.

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