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Data Article

Dataset on protein composition of a human plasma sub-proteome able to modulate the Dengue 2 virus infection in Huh 7.5 cells

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ABSTRACT

The four serotypes of dengue virus (DENV1-4) are the causal agents of the emerging disease Dengue Fever and its severe forms. DENV is inoculated into human blood through a mosquito bite. Thus, plasma is an important media for DENV dissemination in infected persons and several important interactions should take place for the virus with human plasma proteins that strongly influence or may determine the course of the infection. This dataset contains 239 proteins identified in the elution fractions of human plasma subjected to DE-52 anion exchange chromatography. Data on DENV2 infection of Huh 7.5 cells in presence of the human plasma fraction is also presented.

1. Specifications table

Subject area	*Biology*
More specific subject area	*Chromatographic fractionation of human plasma*

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Type of data	*Figures, table and an excel file with the output of Thermo Scientific™ Proteome Discoverer™ software*
How data was acquired	*Mass spectrometry, linear trap quadrupole (LTQ)-Orbitrap Velos mass spectrometer*
Data format	*Processed*
Experimental factors	*Dengue infection under different Human plasma samples preparations*
Experimental features	*Human plasma was adjusted to pH 6.0 and subjected to anion exchange chromatography. Elution fractions were digested with trypsin and protein species were identified by peptide sequencing. Virology assays were performed to investigate the effect of plasma fractions on dengue virus infection to human cells.*
Data source location	*Center for Genetic Engineering and Biotechnology, Havana, Cuba*
Data accessibility	*In this article and in supplementary file*

2. Value of the data

- This data could be of interest to laboratories studying the interactions of DENV with human plasma proteins.
- Data presented can be compared with list of proteins identified by different methodologies as putative DENV binding proteins.
- Data of proteins present in the different chromatography fractions could be useful for laboratories working on the fractionation of human plasma using different chromatographic approaches.

3. Data

This dataset describes conditions of chromatographic fractionation of human plasma resulting in a protein sample able to modulate DENV infection in mammalian cells, provides the identity of proteins contained in the different chromatography fractions and presents data on the infection of Huh 7.5 cells with DENV2 in presence of abovementioned human plasma sample.

4. Experimental design, materials and methods

4.1. Viruses and cell lines

DENV2 (strain SB8553, isolated in Malaysia in 2002) and Huh 7.5 cells were kindly donated by Dr. Lisset Hermida (CIGB, Cuba) and Dr. Félix Rey (Pasteur Institute, France), respectively. DENV2 was propagated in Vero cells (Vero, NIBSC code 011038), determining virus titers by plaque assays in the same cell line [1]. Cells were grown in DMEM supplemented with penicillin (100 units/mL), streptomycin (100 μg/mL) and 5% and 10% (v/v) heat-inactivated fetal bovine serum (FBS) for Vero and Huh 7.5 cells, respectively.

The mouse brain-derived virus preparation was obtained by homogenization of suckling mouse brains infected with DENV2 (New Guinea strain) using RPMI-1640 medium. Purified flavivirus-reactive mAb 4G2 was provided by the Unit for Production of Monoclonal Antibodies (CIGB, Cuba).