Interaction of the E2-GBV-C derived peptide, P6-2-VIR576, with Phosphatidylcholine rich Membranes.

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The human immunodeficience virus type 1 (HIV-1) is an envelopped viruses that must overcome membrane barriers to deliver the viral nucleocapsid into the cytoplasm. It is the causative agent of the acquired immunodeficience syndrome (AIDS). A key step in the virus entry is the fusion with host membranes mediated with a fusion peptide (HIV 1-FP). In recent years, many synthetic peptides have been assayed as possible HIV-1 FP inhibitors [1]. P6-2-VIR576, a 40 amino acid negatively charged peptide, is a derived peptide from E2-protein of GBV-C virus, which has demonstrated anti-HIV-1 FP activity [2]. The aim of this work is to study the effects of the peptide on the structural properties of lipid membrane using dipole-potential membrane probes and fluorescence microscopy. As model membranes, LBs composed of DMPC/DMPS (3:2), DMPC/EDMPC (3:2), DPPC/DPPS (3:2), containing 1% NBD-PC fluorescence probe, on silica as a solid support were used. Significant spectral shifts of the fluorescence dye di-8-ANEPPS induced by the peptide occur in lipid membranes studied due to the electrostatic interaction. In addition, fluorescence microscopy images revealed a noticeable change on lipid structure. The results obtained for DMPC/DMPS (3:2) in absence and presence of P6-2-VIR57 are shown in Figure 1.

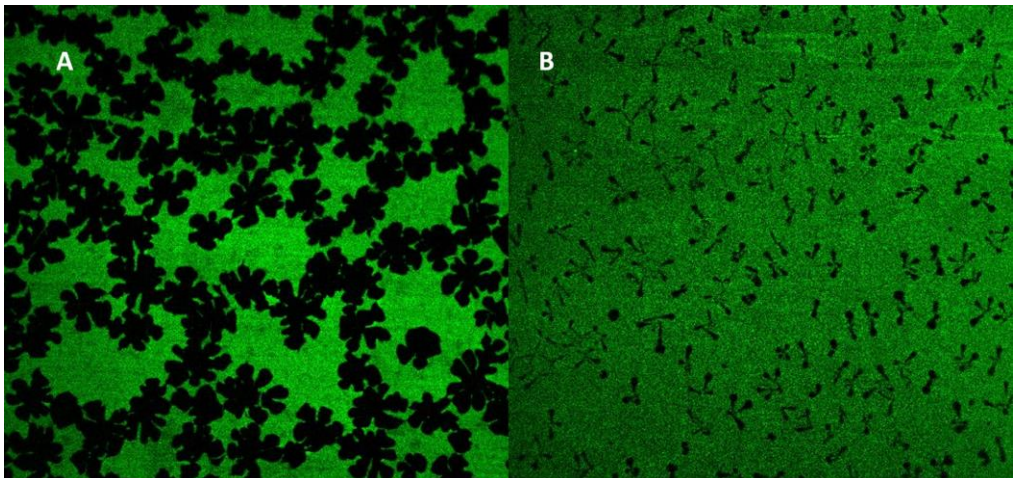

Figure 1 Effect of P6-2-VIR576 on the topography of DMPC/DMPS (3:2) Langmuir-Blodgett films at 12 mNm^{-1}. **A**) DMPC/DMPS (3:2), **B**) DMPC/DMPS (3:2) in presence of P6-2-VIR576. Lipid/peptide ratio (9:1)

Acknowledgements This work was supported by Grants CTQ2012-37589-C02-01/02 from the *Ministerio de Economía y Competitividad* and 2014 SGR 216 from the *Generalitat de Catalunya*

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