

Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

Effect of Alcohol on Interaction of Model Biological Membrane with Steroids MARCO PINNA, MANUELA MURA, MARJAN FAMILI, University of Central Lancashire, YUHUA ZHOU, UCLan Biomedical Technology Ltd (Shenzhen), P. R. China, ANDREI ZVELINDOVSKY, University of Central Lancashire — The effect of alcohol in the lipid bilayer changes the gel-phase structure of the lipid bilayer. Interactions between the alcohol molecules and the lipid bilayer were investigated using molecular dynamics. Alcohols such as ethanol and methanol are often used in drug delivery application. Ethanol is used to dissolve hydrophobic steroidal drugs such as Beclamethasone dipropionate, Fluticasone propionate and Prednisone. All the systems considered were equilibrated at 310K and ran for 100ns in the presence of dimyristoylphosphatidylcholine (DMPC) lipid bilayer. In addition the simulations were performed to investigate the behaviour of anti-asthma drugs such as Beclamethasone dipropionate in the water environment and 2.5% of ethanol.

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Date submitted: 15 Nov 2013

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