

Surface Charge and the Association of Liposomes with Colon Carcinoma Cells

Dagmara Baczynska^a, Katarzyna Widerak^a, Maciej Ugorski^{a,b} and Marek Langner^{c*}

^a Faculty of Veterinary Medicine, Agricultural University, ul. Norwida 25, 50–375 Wroc/aw, Poland

^b Institute of Immunology and Experimental Therapy, Polish Academy of Sciences, ul. Weigla 12, 53–114 Wroc/aw, Poland

^c Institute of Physics, Wrocław Institute of Technology, Wyb. Wyspińskiego 27, 50–370 Wrocław, Poland. E-mail: langner@rainbow.if.pwr.wroc.pl.

* Author for correspondence and reprint requests

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Interaction between the plasma membrane and aggregate lipid surface determines how efficiently the encapsulated drug will be delivered into the cell. Electrostatic interactions are one of the main forces affecting liposome and aggregate association with the charged cell surface. In this study, the effect of surface charge on the association of liposomes with human colon CX-1.1 cancer cells was studied. When phosphatidylserine was incorporated into a lipid bilayer, the amount of liposomes associated with cells tended to increase along with the amount of negatively charged lipid present in the liposomal lipid bilayer. When the cationic lipid dioleoyl-1,2-diacyl-3-trimethylammonium-propane (DOTAP) was included into the liposome formula, their uptake by the cells was also increased. Maximum binding occurred when the amount of positively charged lipids in liposomes was about 10 mol% of lipids.