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Interaction between Cell Penetrating pVEC and cell membranes

ABHIJIT MISHRA, Bioengineering Dept., University of California Los Angeles, GHEE HWEE LAI, NATHAN SCHMIDT, GERARD WONG, Bioengineering Dept., University of California Los Angeles, Dept. of Physics University of Illinois Urbana Champaign — Vascular Endothelial Cadherin (VEC) is a transmembrane-spanning glycoprotein that belongs to the family of cell adhesion molecules and plays an active role in control of vascular permeability and angiogenesis. PVEC, an 18 amino acid domain, has been shown to be able to traverse cell membranes with attached macromolecules. pVEC is an amphiphilic molecule with a high content of basic amino acids resulting in a net positive charge. Electrostatic and hydrophobic interactions can perturb membrane self-assembly and stability and are likely to be responsible for peptide uptake. We use synchrotron x-ray scattering and confocal microscopy to examine the phase behavior of the pVEC lipid system, and its relation to membrane permeation mechanisms.

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