

For formulating DPPC lipids and vitamin E complex, there was selected a ratio of vitamin E and DPPC lipids (20 micro liters of vitamin E and 3 mg of DPPC lipids), which gives us proportions of one vitamin E molecule for one lipid. In liposome, Vitamin E is placed in hydrophobic part of liposomes' bilayer. The formation of the complex is confirmed with either calorimetric or biological experiments. In particular, calorimetric curve of the complex differs considerably from calorimetric peak profiles of the pure DPPC liposomes - one peak cooperative heat absorption, which is characteristic of pure liposomes for calorimetric curve. Due to complex formation with Vitamin E, heat absorption peak profile has changed significantly. Liposomes peak has become less cooperative and less thermostable (the heat absorption peak changed in favor to a low temperature). Because of the biological experiments, behavior of the complex nanoparticles (vitamin E and DPPC lipid complex) became more effective than adding the same amount of pure vitamin E on Jurkat cells. As for the hydrophilic vitamin C and DPPC lipid complex formation, quite understandably, failed because of the equally negative potentials of DPPC lipid head and vitamin C molecule. Negative potential of DPPC liposomes were shown on Z-sizer device. In conclusion, our efforts to create a vitamin C- and DPPC lipid complex were unsuccessful. This is confirmed by calorimetric and biological experiments.