Experimental design

Aim: To study the size distribution of liposomes in suspension, and to determine the presence of RNAs on the surface and in the value of liposomes.

Equipment:

- UV-spectrophotometer;
- Malvern ZetaSizer 5000 analyzer.

Size' distribution of liposomes

Size' distribution of liposomes will be performed by use of protocol of dynamic light scattering, using a helium-neon laser (633 nm) as a source of the incident light, operating at a scattering angle of 90° and a temperature of 25.0°C, assuming a medium viscosity of 2.20 cP and a medium refractive index of 1.33.

The presence of RNA on the surface of liposomes

The presence of RNA on the surface of liposomes will be performed by original protocol with the use of two conditions of ethidium fluorescent stainer: 1) ethidium bromide (absorbance maxima at 360 nm/ emission maximum at 590 nm), and 2) ethidium homodimer (absorbance maxima at 528 nm/ emission maximum at 617 nm).

Suspension of liposomes in DMSO will be stained by 5 μM/L of ethidium bromide or ethidium homodimer. After staining, the liposomes will be centrifuge at 2000g, and sludge will be dissolved in 1 ml of DMSO.

The quantitative results will be obtained by photometry at UV-spectrophotometer. Ethidium bromide staining will indicate the presence of RNAs both on the surface and in the volume of the liposomes. Ethidium homodimer staining will indicate the presence of RNAs only on the surface of the liposomes.