Effects of the electrostatic complexation between anionic pH-sensitive liposomes and star-shaped polycations on the release of the liposomal content

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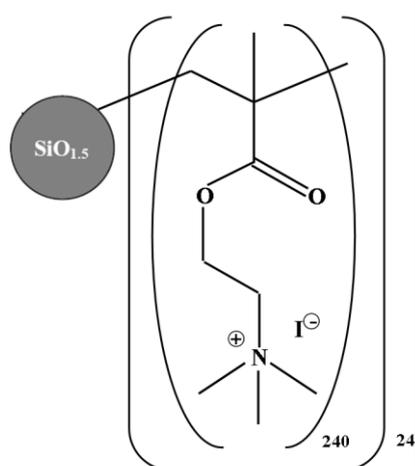
Materials

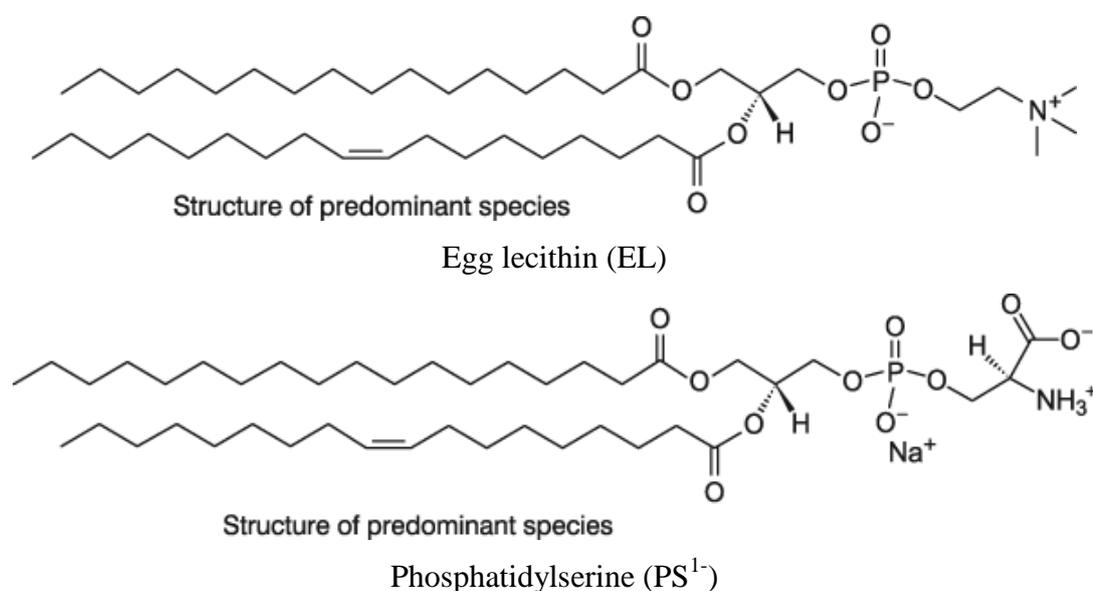**Figure S1** The cationic PE star (schematic presentation).

Figure S2 Lipids (schematic presentation).

Experimental

A release of an encapsulated compound from PS[1-]/EL/MOCH fliposomes was studied by conductometry using a CDM 83 Radiometer (Denmark) conductometer with a PP1042 platinum electrode.. The fliposomes loaded with NaCl solution were used. For this, during preparation the lipid film was dispersed in 1 M NaCl solution in 0.001 M Tris buffer with pH 7. After preparation of fliposomes the salt from the surrounding solution was eliminated by dialysis towards 0.001 M Tris buffer with pH 7. The dialysis process was repeated until conductivity of external solution became constant 42.9±0.2 µS/cm. The conductivity of the 1 mg/mL fliposomes suspension in 0.001 M Tris buffer with pH 7 was 63.5±0.4 µS/cm. A maximum conductivity after a complete destruction of fliposomes in the presence of an excess of a non-ionogenic Triton X-100 surfactant solution was measured 155.0±4.0 µS/cm. The Triton X-100 by itself was found not to give impact in conductivity of the system.

The calibration curve demonstrating linear dependence of conductivity of Tris buffer upon concentration of added NaCl are presented on Figure S3.
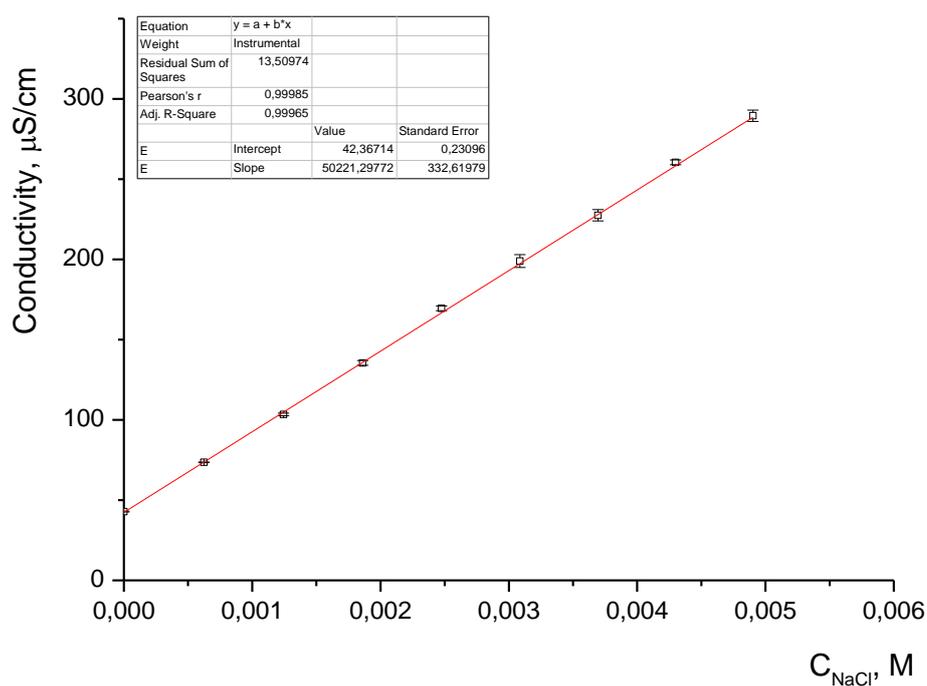

Equation	y = a + b*x		
Weight	Instrumental		
Residual Sum of Squares	13,50974		
Pearson's r	0,99985		
Adj. R-Square	0,99965		
		Value	Standard Error
E	Intercept	42,36714	0,23096
E	Slope	50221,29772	332,61979

Figure S3 Concentration dependence of conductivity of NaCl solution in 0.001 M Tris buffer with pH 7.

In the whole range of studied pH values the linear dependence of conductivity of system upon NaCl concentration. The calibration curve demonstrating linear dependence of conductivity of the most acidic acetate buffer pH 5 upon concentration of added NaCl are presented on Figure S4.

All measured conductance values were recalculated in relative conductivity by formula

$\Omega = (\Omega_t - \Omega_0)/(\Omega_{max} - \Omega_0),$

where Ω_t is a current suspension conductivity, Ω_0 an initial conductivity and Ω_{max} a maximum conductivity resulted after fliposomes disintegration by Triton X-100.

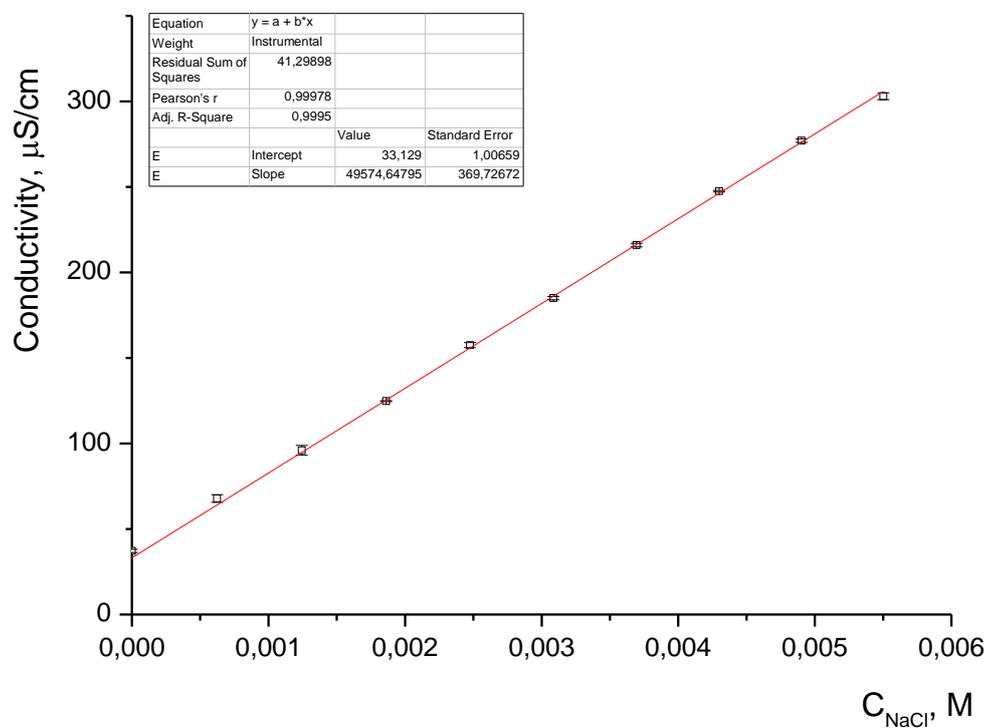| Equation	y = a + b*x		
Weight	Instrumental		
Residual Sum of Squares	41,29898		
Pearson's r	0,99978		
Adj. R-Square	0,9995		
		Value	Standard Error
E	Intercept	33,129	1,00659
E	Slope	49574,64795	369,72672

Figure S4 Concentration dependence of conductivity of NaCl solution in 0.001 M Acetate buffer with pH 5.