Supplementary Material

Oxidative Stress Can Affect the Gene Silencing Effect of DOTAP Liposome in an *In Vitro* Translation System

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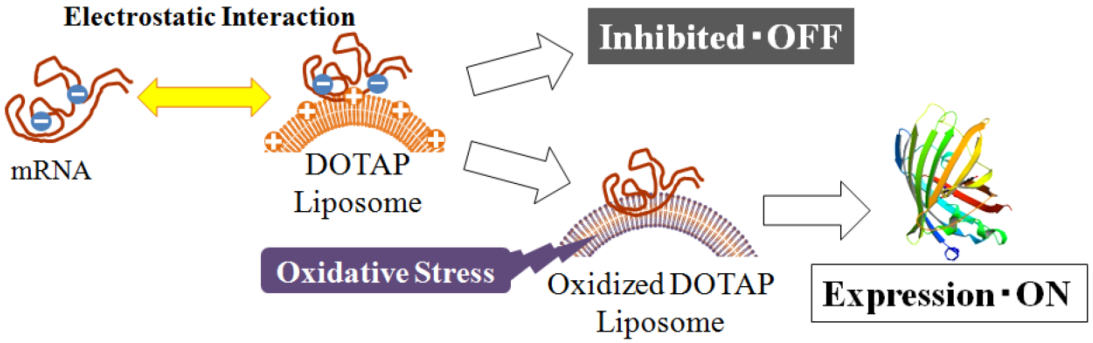
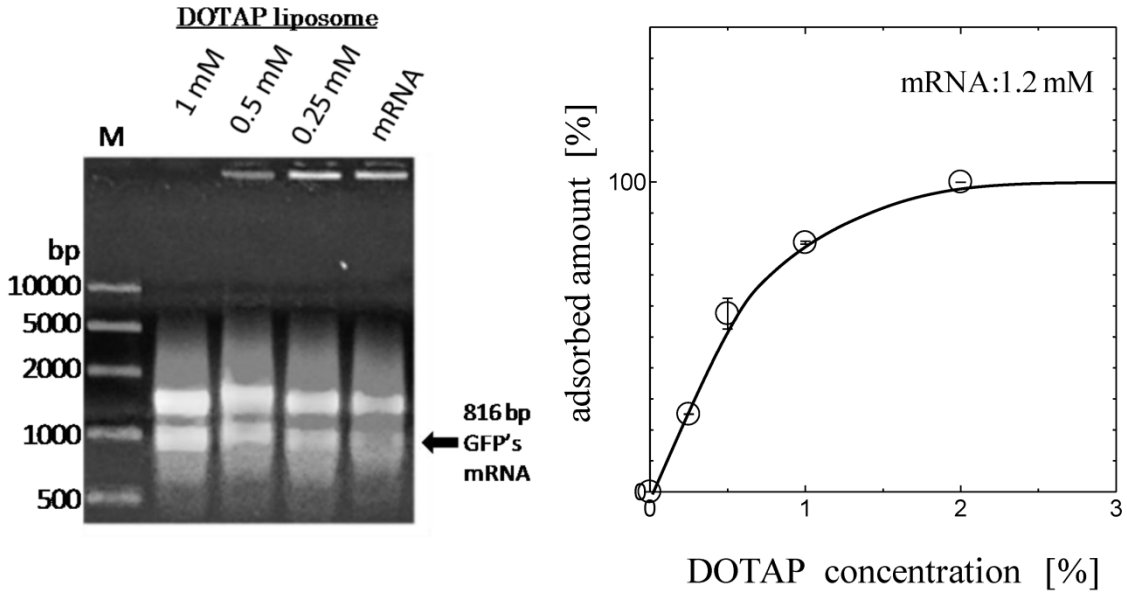


Fig.S1 Conceptual illustration of the present study



DOTAP concentration[mM]	0.25	0.5	1	2
DOTAP/mRNA[mol%]	4.2×10^3	8.2×10^3	16.4×10^3	32.8×10^3
DOTAP/mRNA[+/−]	4.9	9.8	19.6	39.2
DOTAP liposome/mRNA	0.14	0.29	0.58	1.16

Fig.S2 Adsorption of mRNA on DOTAP liposome. The mRNA adsorption was determined by agarose gel electrophoresis. The initial concentration of nucleotide of mRNA was set at 1.2 mM. mRNA or mRNA with DOTAP liposome was applied to the sample slot of the agarose gel. The mRNA bound on DOTAP liposome did not move from the initial slot (top of the electrophoresis image) while non-bound mRNA was moved toward the cathode. After the electrophoresis, the mRNA was stained by Cyber-Green for its visualization. Free mRNA shows double bands at 816 and 1232 bp. The obtained image was quantified through the densitometer analysis using Scion-Image. The obtained results were shown in right Figure and bottom Table, showing that the adsorbed mRNA was increased with the increase of DOTAP.

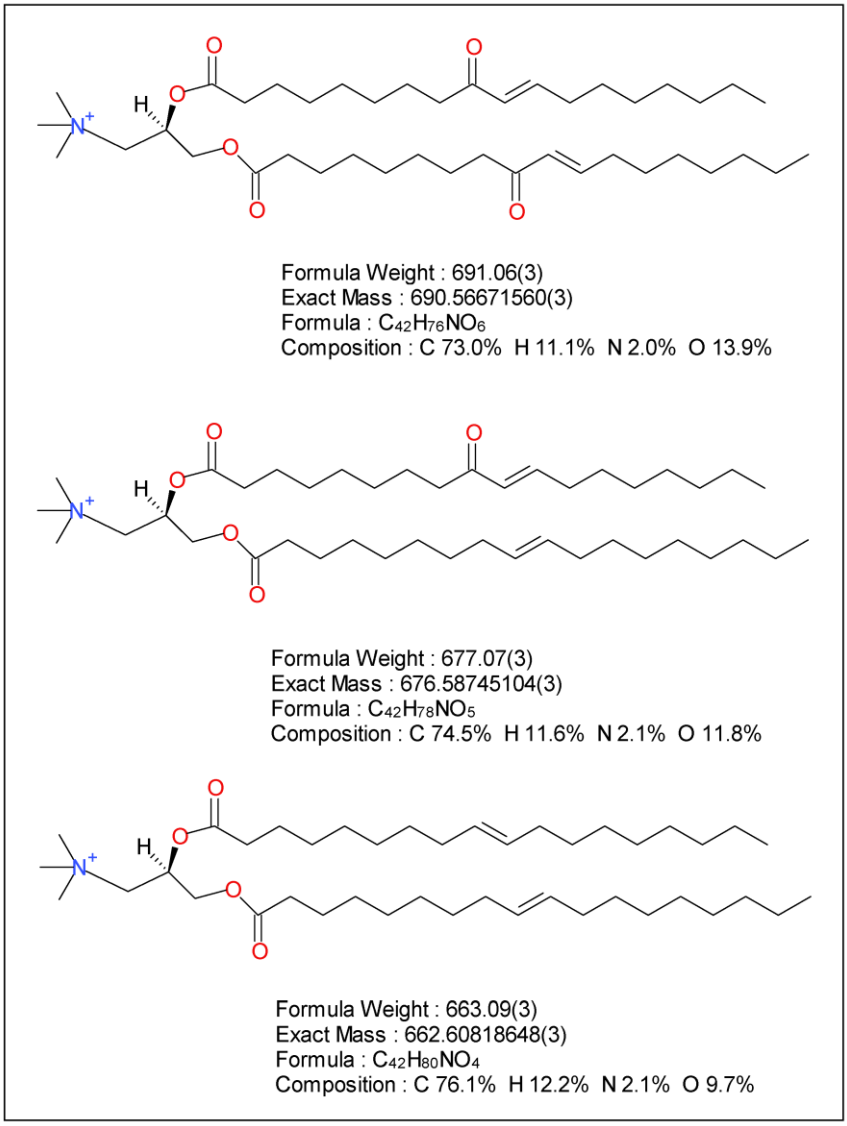


Fig.S3 Expected chemical Structure of oxidized DOTAP.