**Supplementary Information** 

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cellular Liposome leakage and increased 4 permeability caused by guanidine-based oligomers: 5 of liposome composition on 6 Effects liposome epithelial barrier 7 leakage and lung human 8 permeability

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24 Figure S1. Representative molecular structures of (a) PHMG and (b) PHMB



Figure S2. Fluorescence intensity of (a) low concentration (0 – 0.00625 mM) and (b) high concentration (0.125 100 mM) of 5(6)-caboxyfluorescein at pH ~7.4. Insert in Figure S1(b) shows the self-quenching of 5(6)-

30 carboxyfluorescein at high concentrations.





**Figure S3.** GPC spectrum of PHMG (1,000 mg  $L^{-1}$ ) and PHMB (1,000 mg  $L^{-1}$ ). The weight-average molecular mass (M<sub>w</sub>) of PHMG and PHMB based on the first peak was 5,674 Da and 5,503 Da, respectively.



42 Figure S4. 5(6)-Carboxyfluorescein leakage of the DOPC and DOPC/DOTAP (80/20) liposomes by 23 mg L<sup>-1</sup>

43 PHMG, polyhexamethylene guanidine.



Figure S5. 5(6)-Carboxyfluorescein leakage of the DOPG and DOPG/DOPE (50/50) liposomes by 23 mg L<sup>-1</sup>
PHMG, polyhexamethylene guanidine.

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