

Supplemental Information

1. The Characterization of Cationic Lipid DAO3

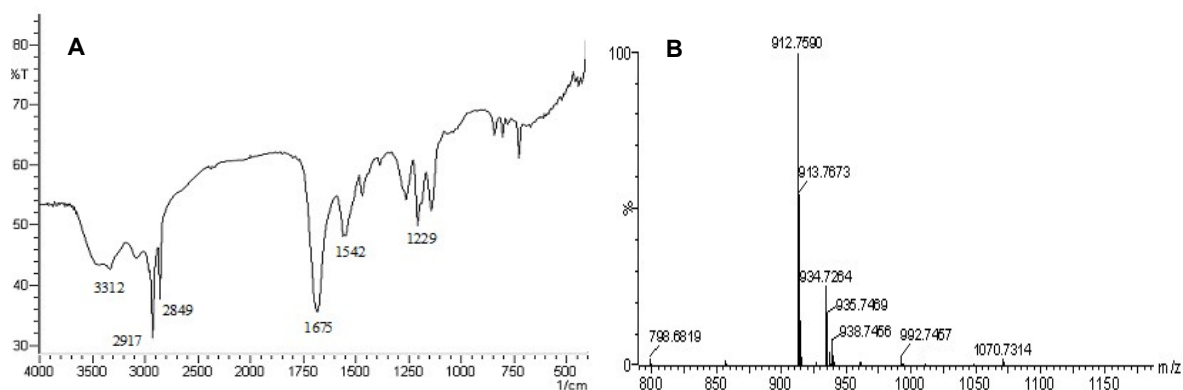


Fig. S1 Structure characterization of DAO3 (A: IR; B: HR-ESI-MS).

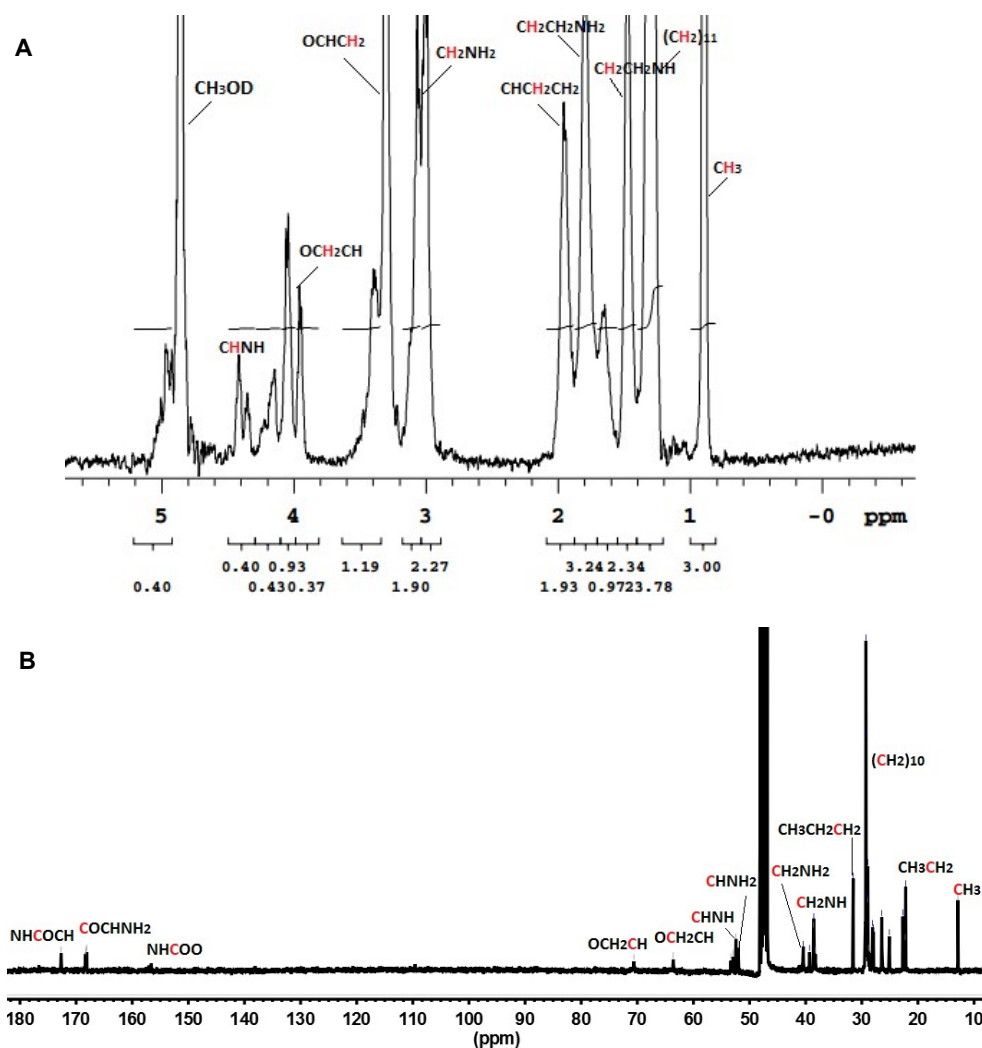


Fig. S2 Structure characterization of lipid DAO3. (A: ¹H NMR; B: ¹³C NMR. The peak labelled "CH₃OD" is the solvent signal.)

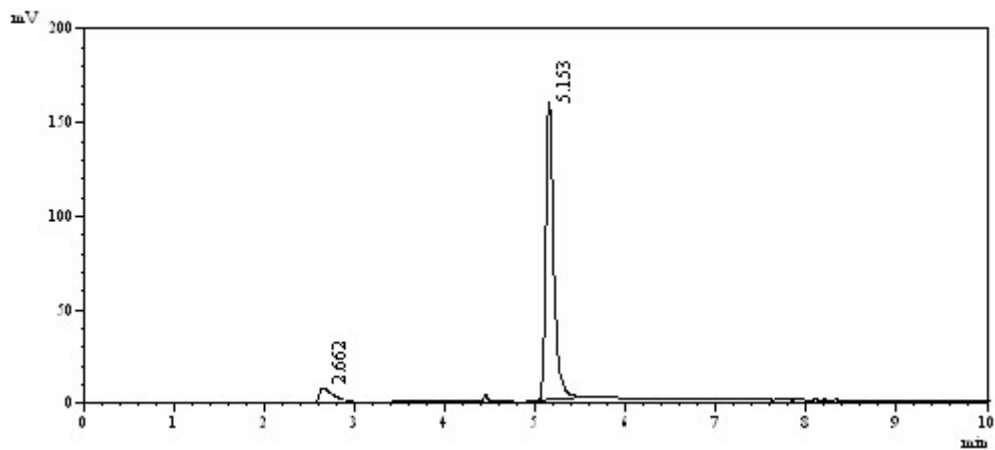


Fig. S3 HPLC of cationic lipid of DAO3, and HPLC purity was $97.2\% \pm 2.5$ (n=5).

2. TEM of Cationic Liposomes

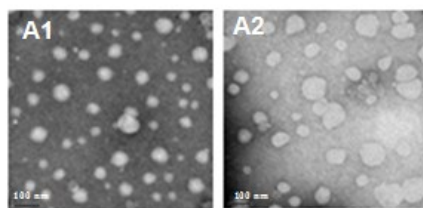


Fig. S4 Negativ-stain transmission electron micrographs of cationic liposomes (A1: DAO3, A2: DDCTMA)

3. The Turbidity of Liposomes

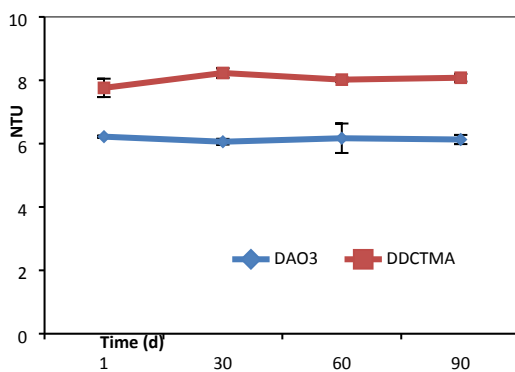


Fig. S5 The turbid degree of liposomes DAO3 and DDCTMA.

4. Fluorescence Microscopic Images of pGFP-N2 Gene Expression In Vitro

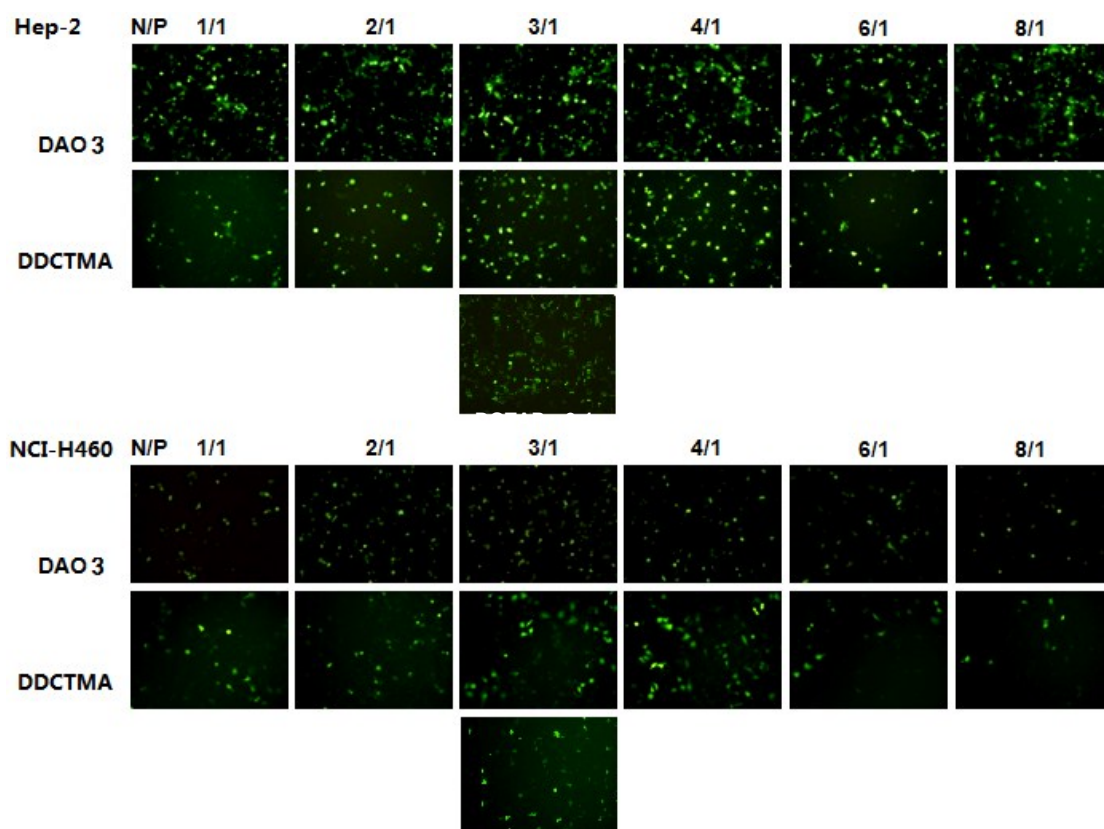


Fig. S6 Fluorescence microscopy images of Hep-2 and NCI-H460 cells after transfection with DAO3/pGFP-N2, and DDCTMA/pGFP-N2 at different N/P ratios.

5. The Weight Changes of Mice

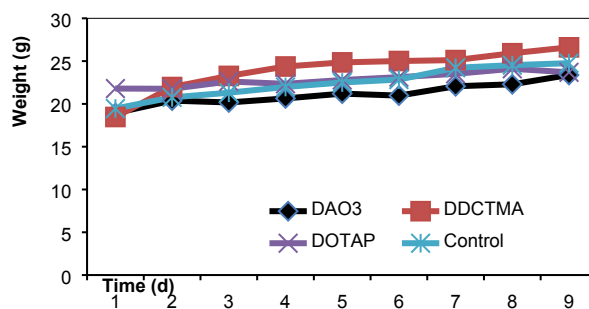


Fig. S7 The weight changes of mice after injections of lipoplexes. (n=3)