Supporting Informations

Synthesis of α-amino-lipophosphonates as cationic lipids or co-lipids for DNA transfection in dendritic cells

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Supplementary information (SI)

SI; S-1: ¹H, ³¹P, & ¹³C NMR spectra

SI; S-2: Evaluation of the stability of compounds 5a in acidic media

SI; S-3: Evaluation of the stability of compounds 5b in acidic media
SI; S-1: $^1$H, $^{31}$P, & $^{13}$C NMR spectra of new compounds

$^1$H NMR (400 MHz, CD$_3$OD) of compound 1a.

$^{13}$C NMR (125 MHz, CD$_3$OD) of compound 1a.
$^1$H NMR (400 MHz, CD$_3$OD) of compound 1b.

$^{13}$C NMR (125 MHz, CD$_3$OD) of compound 1b.
$^1$H NMR (400 MHz, CD$_3$OD) of compound 1c.

$^1$H NMR (400 MHz, CD$_3$OD) of compound 1d.
$^{13}$C NMR (125 MHz, CD$_3$OD) of compound 1d.

$^1$H NMR (400 MHz, CD$_3$OD) of compound 1e.
$^{13}$C NMR (125 MHz, CDCl$_3$) of compound 3e.

$^1$H NMR (400 MHz, CD$_3$OD) of compound 2a.
$^{13}\text{C NMR}$ (125 MHz, CDCl$_3$) of compound 2a.

$^1\text{H NMR}$ (400 MHz, CD$_3$OD) of compound 2b.
$^{13}$C NMR (125 MHz, CDCl$_3$) of compound 2b.

$^1$H NMR (400 MHz, CDCl$_3$) of compound 3a.
$^{31}\text{P NMR}$ (162 MHz, CDCl$_3$) of compound 3a.

$^{13}\text{C NMR}$ (125 MHz, CDCl$_3$) of compound 3a.
$^1$H NMR (400 MHz, CDCl$_3$) of compound 3b.

$^{31}$P NMR (162 MHz, CDCl$_3$) of compound 3b.
$^{13}\text{C NMR}$ (125 MHz, CDCl$_3$) of compound 3b.

$^1\text{H NMR}$ (400 MHz, CDCl$_3$) of compound 3d.
$^{31}$P NMR (162 MHz, CDCl$_3$) of compound 3d.

$^{13}$C NMR (125 MHz, CDCl$_3$) of compound 3d.
$^{1}H$ NMR (400 MHz, CDCl$_3$) of compound 3e.

$^{31}P$ NMR (162 MHz, CDCl$_3$) of compound 3e.
$^{13}$C NMR (125 MHz, CDCl$_3$) of compound 3e.

$^1$H NMR (400 MHz, CDCl$_3$) of compound 4a.
$^{31}$P NMR (162 MHz, CDCl$_3$) of compound 4a.

$^{13}$C NMR (125 MHz, CDCl$_3$) of compound 4a.
$^1$H NMR (400 MHz, CDCl$_3$) of compound 4b.

$^{31}$P NMR (162 MHz, CDCl$_3$) of compound 4b.
$^{13}\text{C NMR}$ (125 MHz, CDCl$_3$) of compound 4b.

$^1\text{H NMR}$ (400 MHz, CDCl$_3$) of compound 5a.
$^{31}\text{P NMR}$ (162 MHz, CDCl$_3$) of compound 5a.

$^{13}\text{C NMR}$ (125 MHz, CDCl$_3$) of compound 5a.
$^1$H NMR (400 MHz, CDCl$_3$) of compound 5b.

$^{31}$P NMR (162 MHz, CDCl$_3$) of compound 5b.
SI; S-2: Evaluation of the stability of compounds 5a in acidic media

1- At room temperature at \( t_0 \) (in acetate buffer, D\(_2\)O as internal probe)

- **5a** (D\(_2\)O, pH 7.4 at room temp.)
- **5a** (D\(_2\)O, pH 5.0 at room temp.)
- **5a** (D\(_2\)O, pH 4.2 at room temp.)

2- At room temperature after 5h at 37°C (in acetate buffer, D\(_2\)O as internal probe)

- **5a** (D\(_2\)O, pH 7.4 at 37°C)
- **5a** (D\(_2\)O, pH 5.0 at 37°C)
- **5a** (D\(_2\)O, pH 4.2 at 37°C)
SI; S-3: Evaluation of the stability of compounds 5b in acidic media

1- At room temperature at t₀ (in acetate buffer, D₂O as internal probe)

2- At room temperature after 5h at 37°C (in acetate buffer, D₂O as internal probe)