Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Supporting Information

Identification of a potent ionizable lipid for efficient macrophage transfection and systemic anti-Interleukin-1β siRNA delivery against acute liver failure

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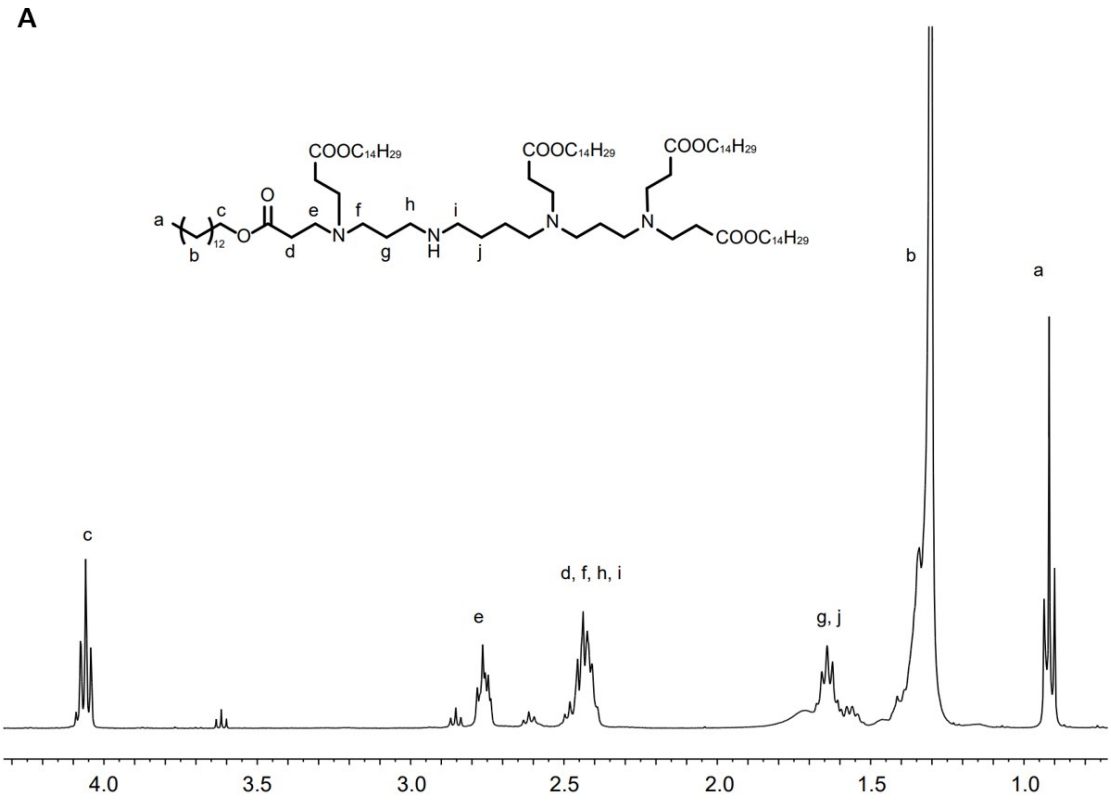
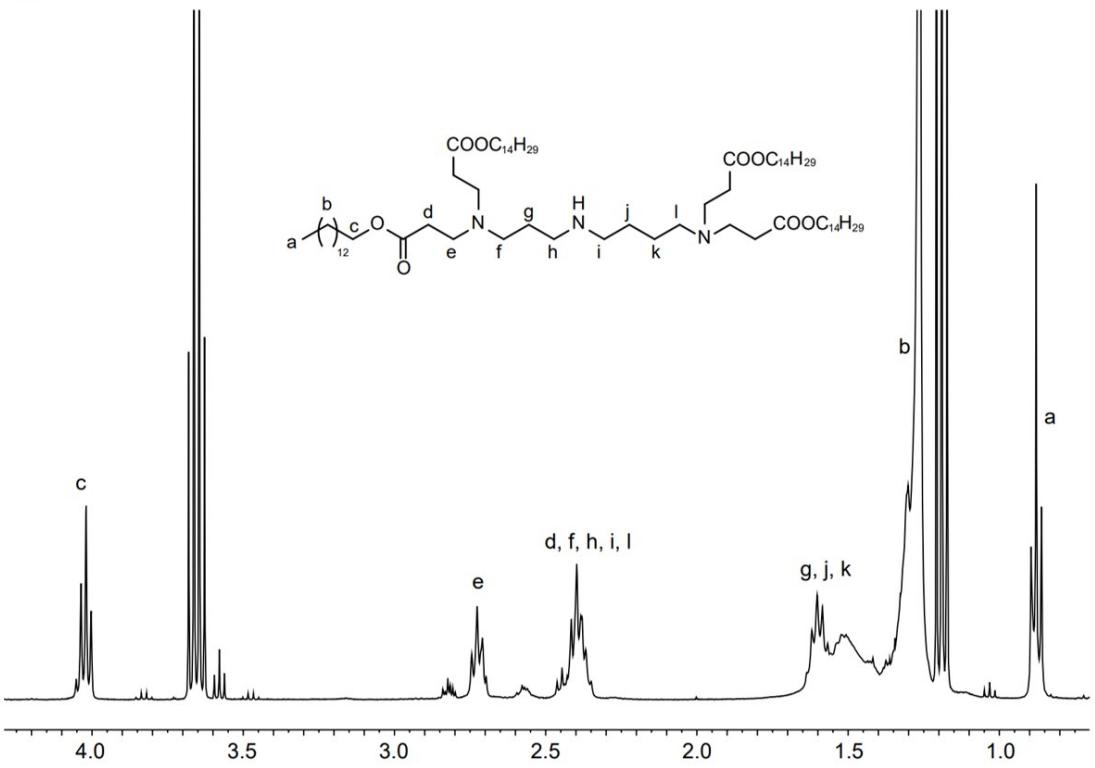


B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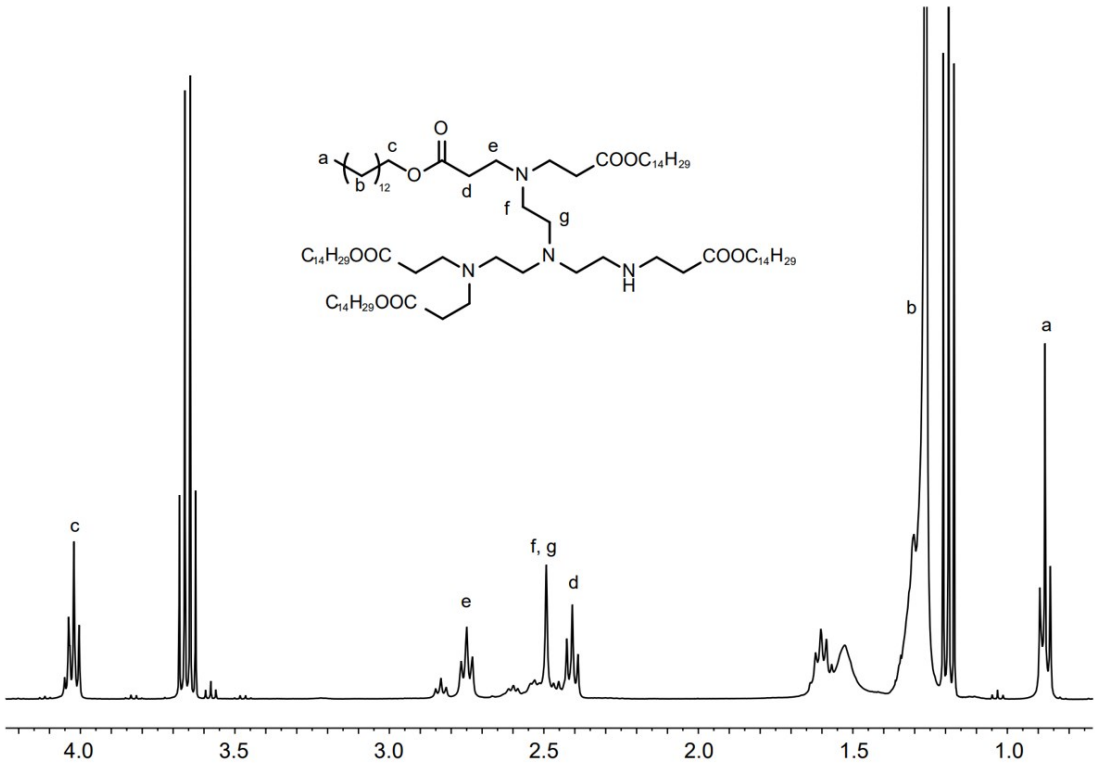
C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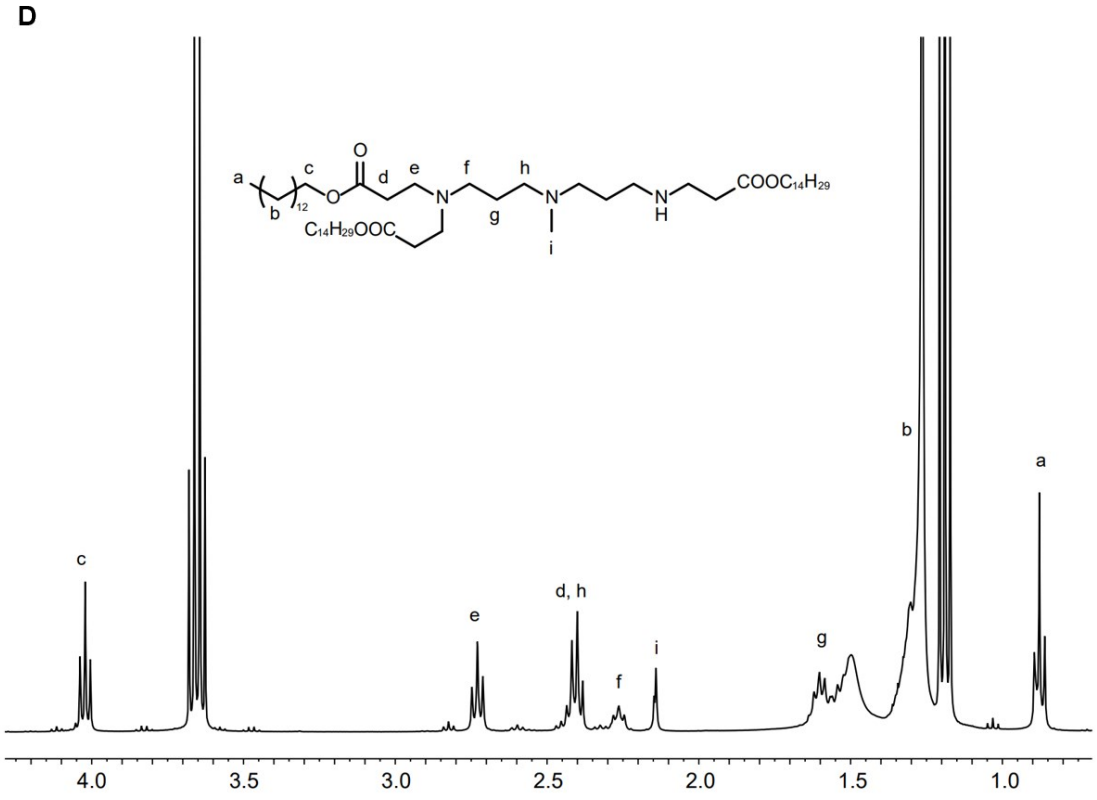

Figure S1. ^{1}H NMR spectrum of ionizable lipid-like material 114 (A), 214 (B), 314 (C), 414 (D) in CD_2Cl_2.

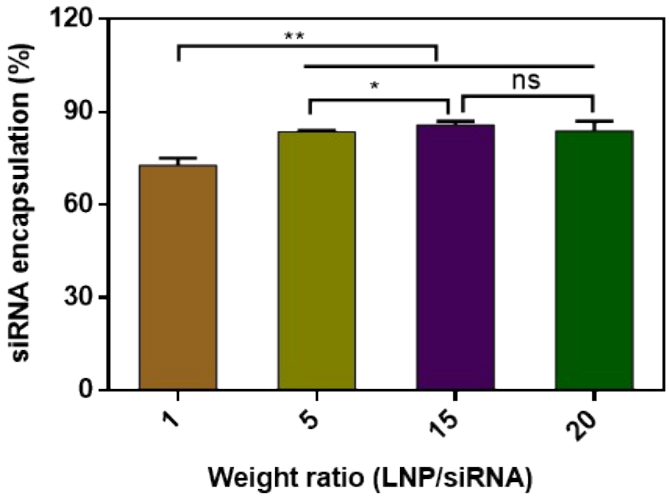

Figure S2. siRNA encapsulation efficiency of 114-LNP at different weight ratios. Data are expressed as means ± SD, n=3. Significance: * $P < 0.05$; **$P < 0.01$; ns, not significant.

A

	114-LNP	214-LNP	314-LNP	414-LNP
Empoty LNP	0.19 ± 0.01	0.15 ± 0.04	0.15 ± 0.01	0.23 ± 0.01
LNP/siRNA	0.22 ± 0.03	0.07 ± 0.02	0.25 ± 0.01	0.24 ± 0.01

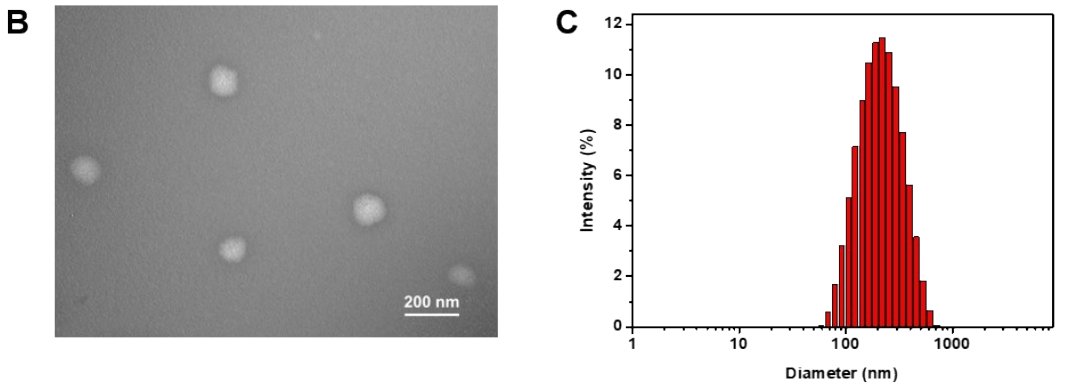

Figure S3. Characterization of ionizable lipid nanoparticles (LNPs). (A) The polydispersity index (PDI) value of LNPs and LNP/siRNA complex. (B) TEM images of LNP-114/siRNA complex. (C) The size histogram of 114-LNP/siRNA complex.

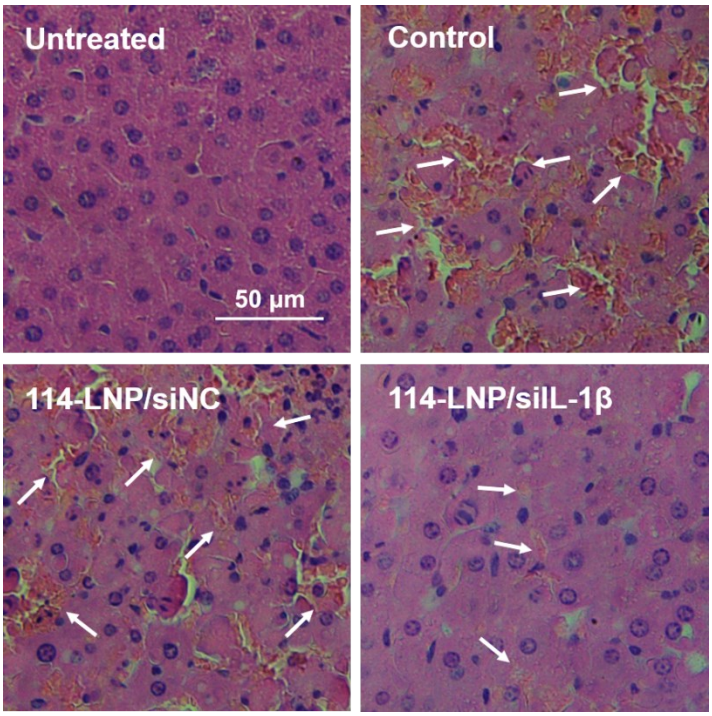

Figure S4. H&E staining of livers sections from LPS/D-GalN induced mice receiving 114-LNP/siIL-1β complexes. Untreated, health mice without treatment; Control, liver injured mice without treatment. White arrow indicates tissue lesion.

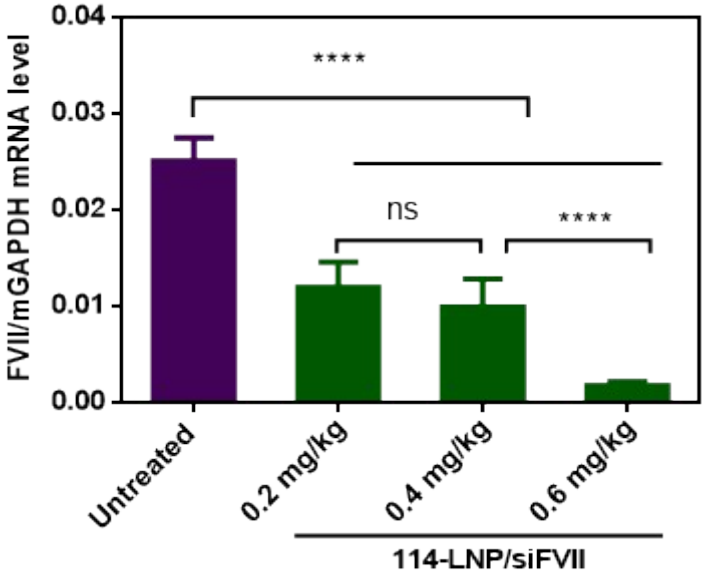

Figure S5. Gene silencing efficiency of 114-LNP/siFVII in liver at siRNA dose of 0.2, 0.4 or 0.6 mg/kg, respectively. Mice without injection was included as untreated control. Results represent mean ± SD (n = 3).