Supporting Information

Intracellular Delivery and Biodistribution Study of CRISPR/Cas9 Ribonucleoprotein Loaded Bioreducible Lipidoid Nanoparticles

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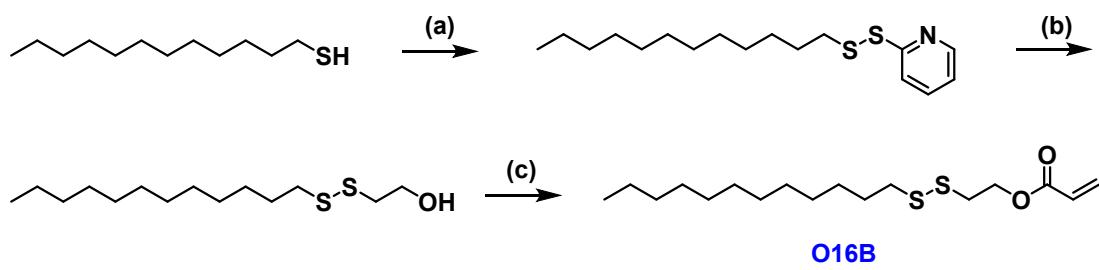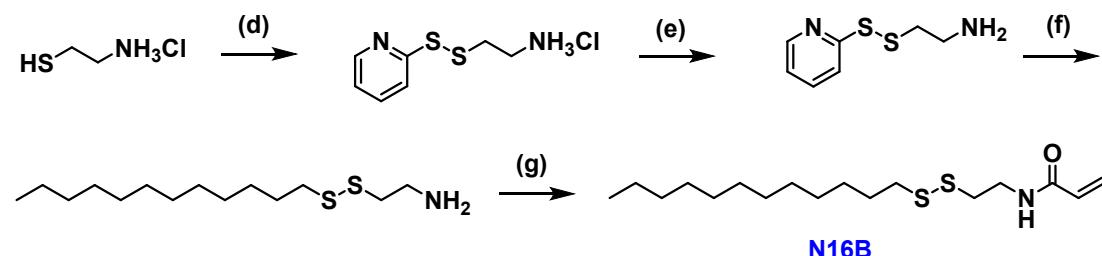
Fig. S1 Synthetic routes employed for synthesis of O16B and N16B tails. (a) 2,2'-dithiodipyridine, acetic acid, dichloromethane, 25 °C, 48 h. (b) 2-mercaptoethanol, acetic acid, dichloromethane, 25 °C, 26 h. (c) acryloyl chloride, triethylamine, dichloromethane, 0 °C, 24 h. (d) 2,2'-dithiodipyridine, acetic acid, methanol, 25 °C, 48 h. (e) sodium hydroxide, water. (f) 1-dodecanethiol, acetic acid, dichloromethane, 25 °C, 26 h. (g) acryloyl chloride, triethylamine, dichloromethane, 0 °C, 24 h.
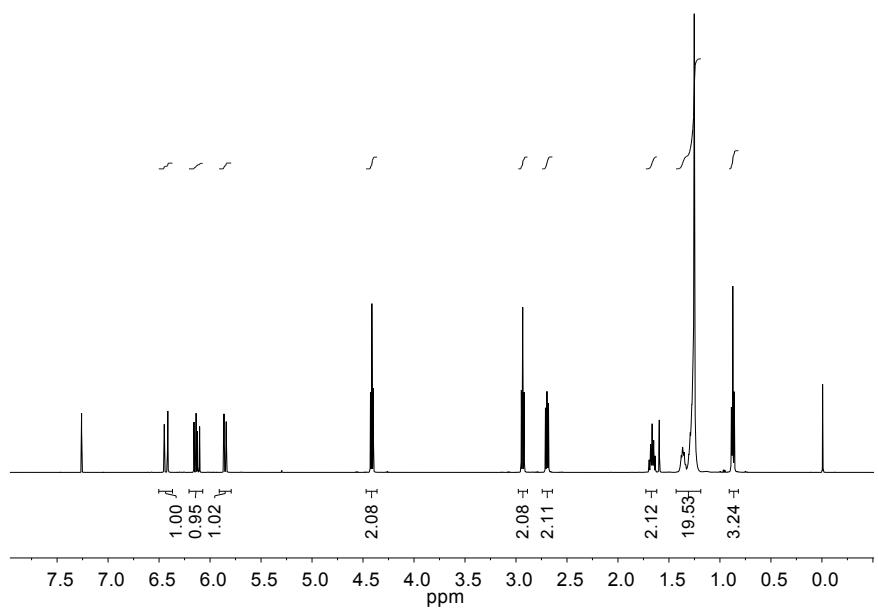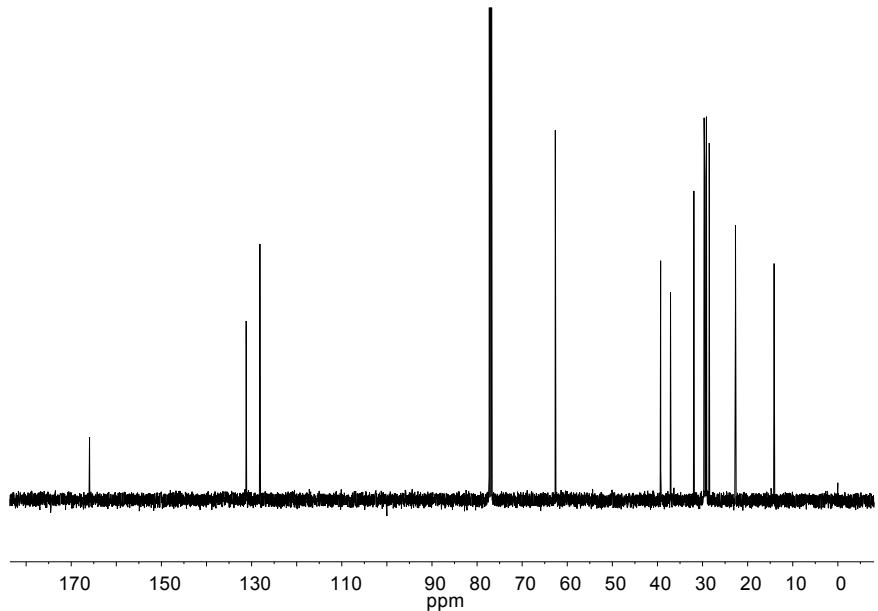
Fig. S2 (a)¹H and (b) ¹³C NMR spectra of O16B recorded in CDCl₃.
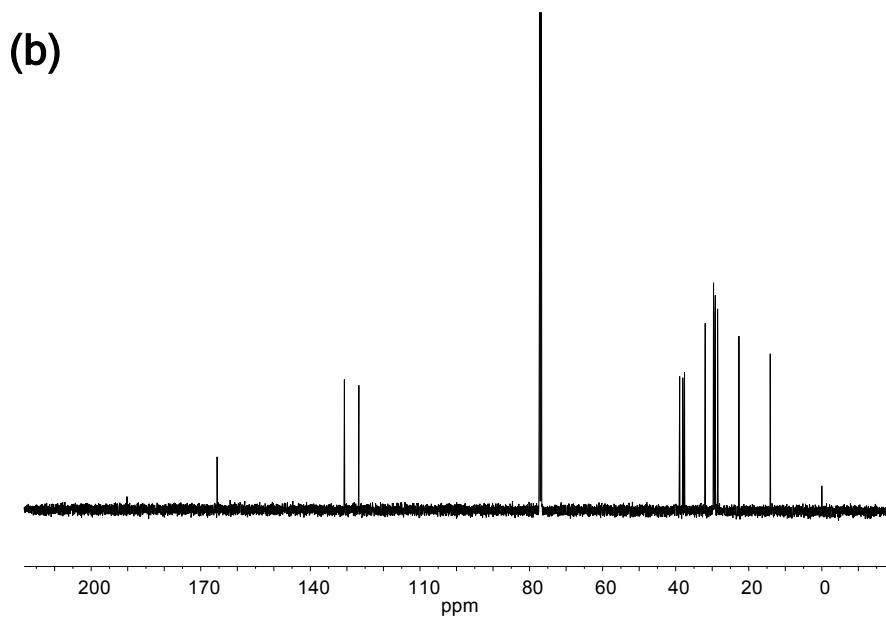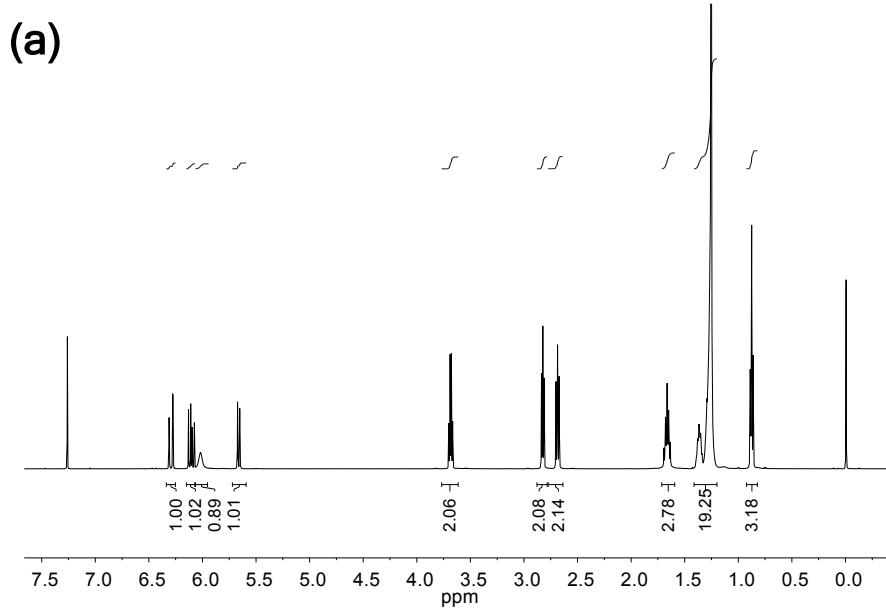
**Fig. S3** (a)^{1}H and (b) ^{13}C NMR spectra of N16B recorded in CDCl₃.
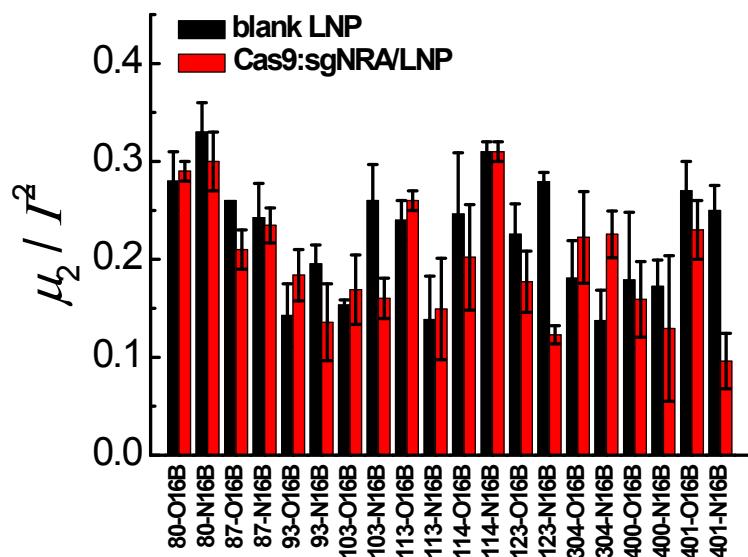
Fig. S4 Polydispersity indexes of blank and Cas9:sgRNA loaded LNPs.
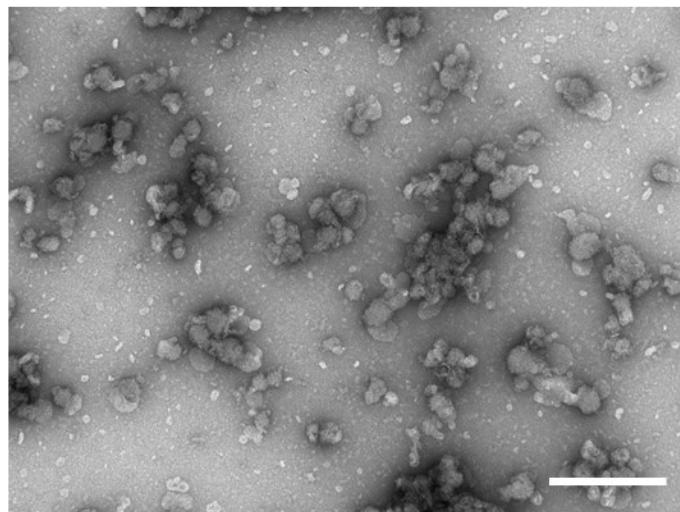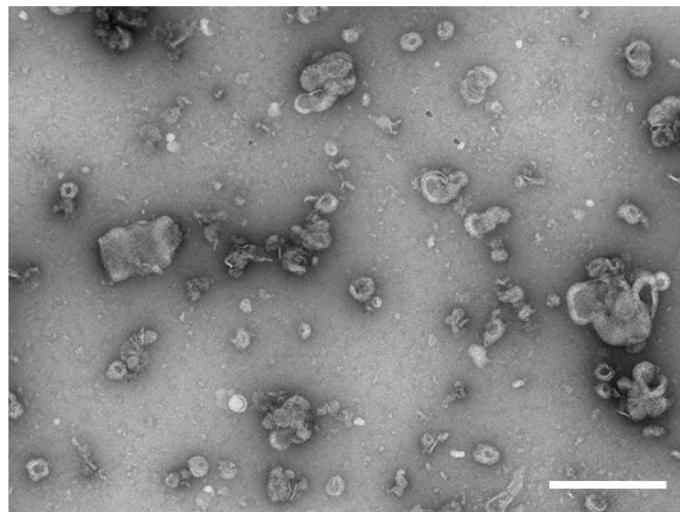
Fig. S5 TEM images of (a) Cas9:sgRNA/80-O16B and (b) Cas9:sgRNA/80-N16B. Scale bar = 400 nm.
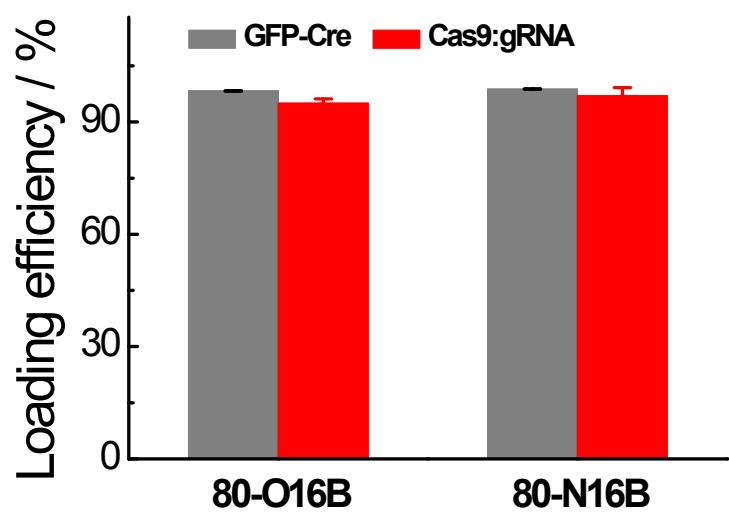
**Fig. S6** Protein loading efficiencies of 80-O16B and 80-N16B LNPs.
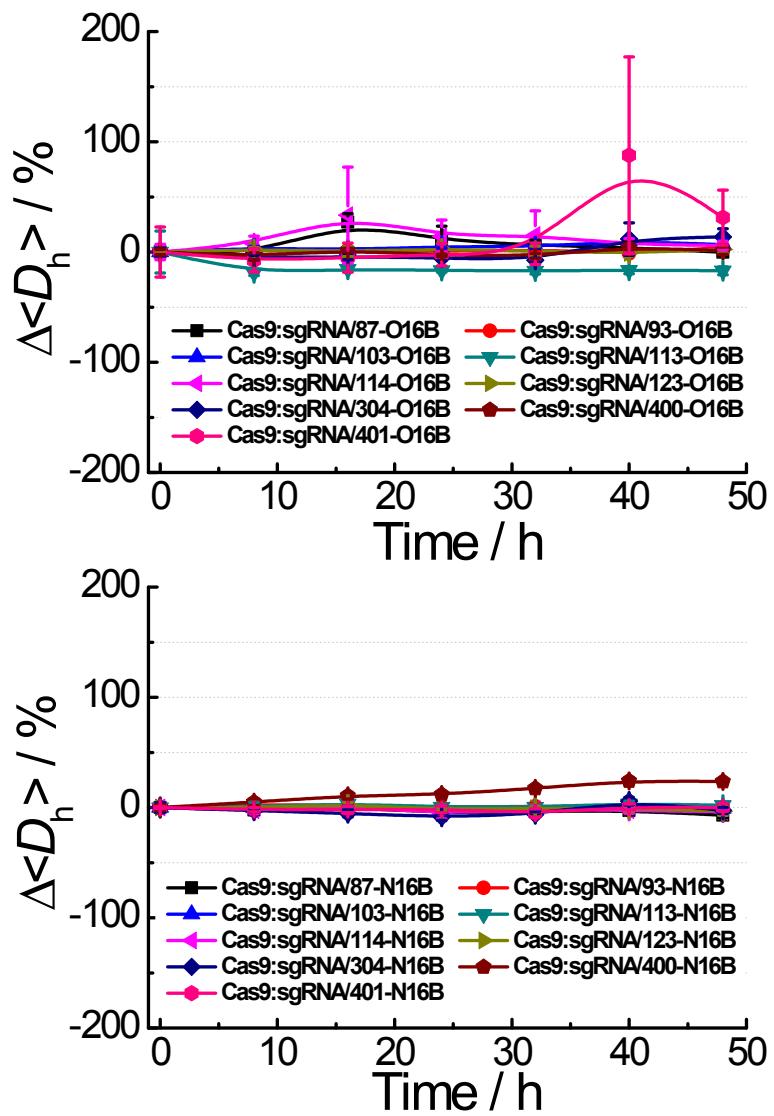
**Fig. S7** Relative size variations of Cas9:sgRNA loaded LNPs.
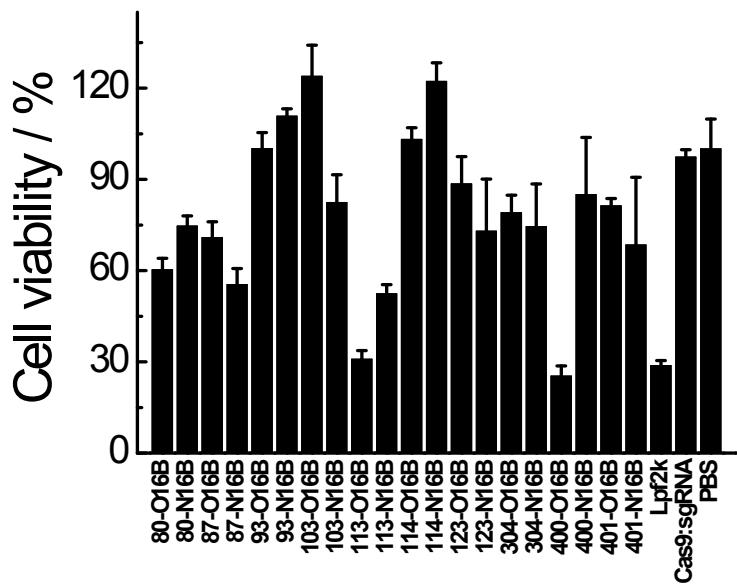
Fig. S8 Cytotoxicity test of Cas9:sgRNA loaded LNPs against GFP-HEK cells.
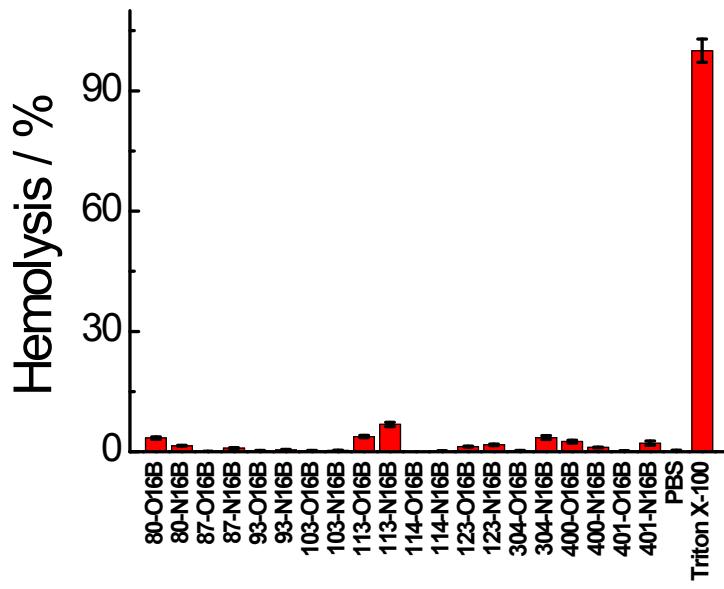
Fig. S9 Hemolysis test of LNPs using human red blood cells.
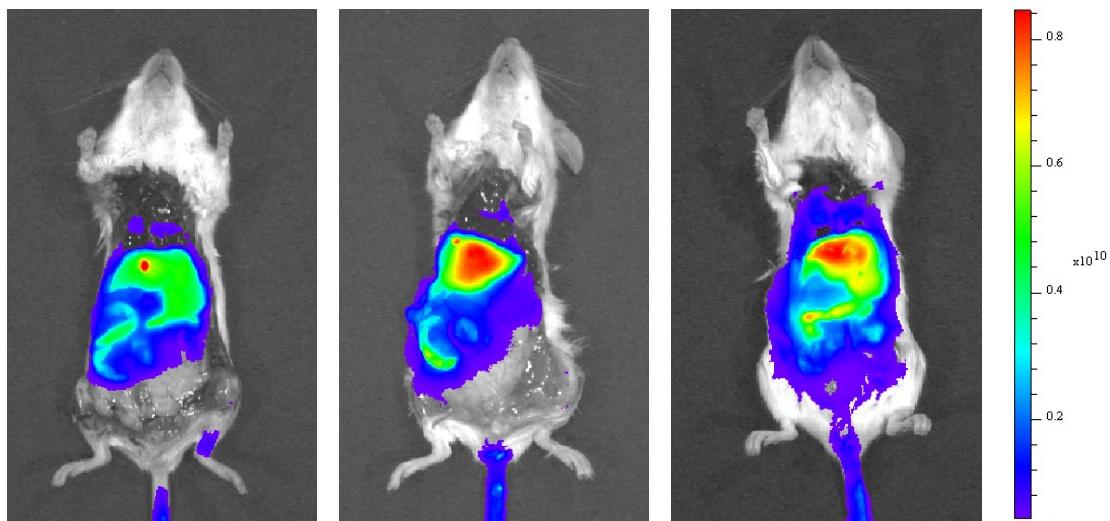
Fig. S10 Fluorescence images of sacrificed Balb/c mice after 240 min of i.v. injection of Cas9:sgRNA/103-N16B nanoparticles.