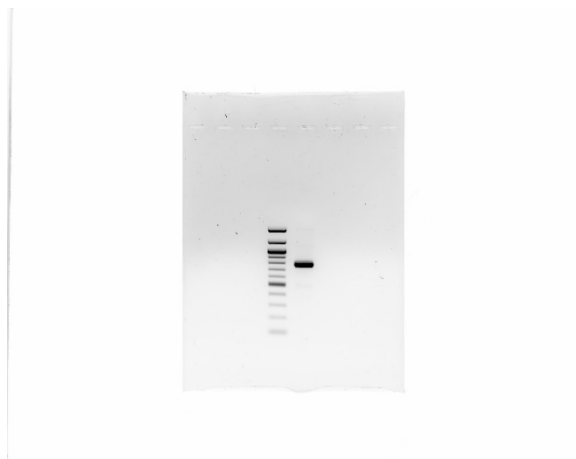
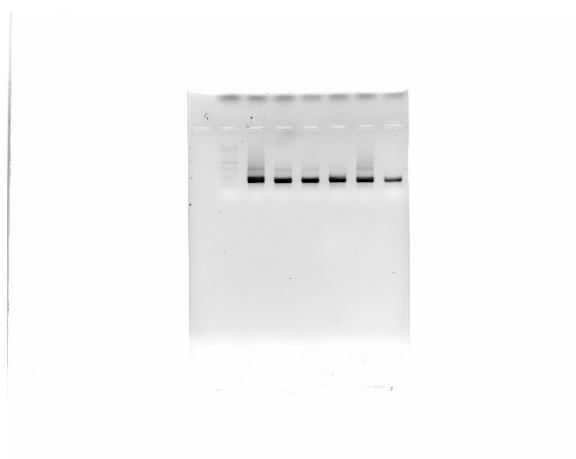


Supplementary Part 2: Original data presented in both main text and supplementary information

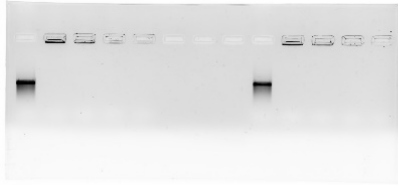
1. Quality control of purified eGFP IVT template by DNA gel electrophoresis (Original gel image of figure 1B)



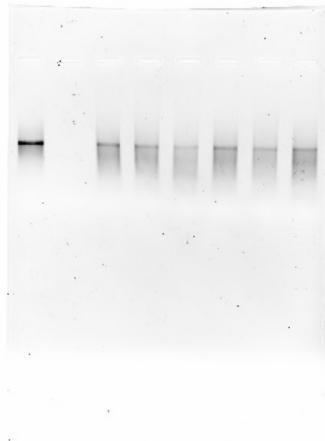
2. Integrity of synthesized unmodified and base modified mRNAs analysed by RNA gel electrophoresis (Original gel image of Figure 1 D)



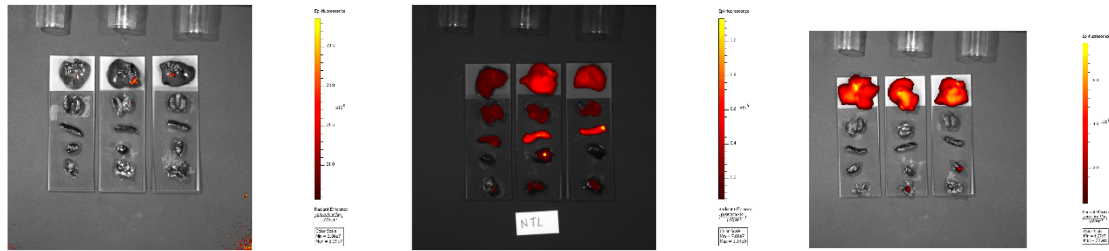
3. RNA gel retardation assay at varying concentrations of lipid to RNA charge ratios from 1:1 to 8:1 (Original gel image of Figure 4)



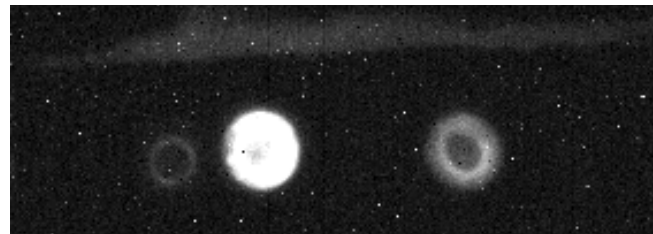
4. RNase sensitivity assay with the treatment of RNase to the LNPs and evaluating the protection of mRNA (Original gel image of Figure 4 F)



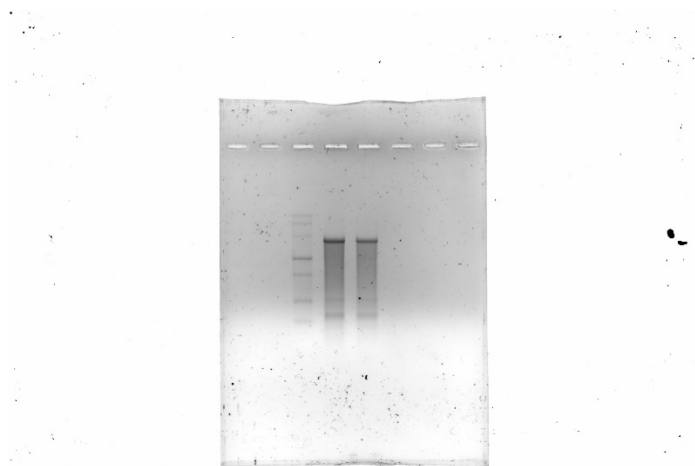
5. Localisation of LNPs and Gal-LNPs in mice evaluated by *In-Vivo* Imaging System (IVIS) (n=3)
(Original Fluorescence images from the system of Supplementary Figure S5)



6. The RNA Dot-Blot analysis of purified $m^1\psi U$ - modified FVIII mRNAs (Original RNA gel of Figure S6 B)



7. The integrity of synthesized (unpurified, UP) and dsRNA removed (purified, P) $m^1\psi U$ -modified FVIII mRNAs were analysed in RNA agarose electrophoresis (Original RNA gel of Figure S6 C)



8. Photographic images of tail vein transverse assay.
(Original pictures of Supplementary Figure S7)

