vaccines

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Article

mRNA Vaccines Encoding the HA protein of Influenza A H1N1 virus delivered by Cationic Lipid Nanoparticles Induce Protective Immune Responses in Mice

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Supplementary Materials

Figure S1. (**a**) Agarose gel electrophoresis of pGEM-EGFP-n1/n2/n3 digested by *Xho*I enzyme. 1, 3 and 5 represent the intact plasmids of pGEM-EGFP-n1/n2/n3; 2, 4, 6 represent their linearized products of 4215bp, 4406bp and 4364bp, respectively. (**b**) Agarose gel electrophoresis of pGEM-H3HA-n1/n2/n3 digested by *Xho*I enzyme. 1, 3 and 5 represent the intact plasmids of pGEM-H3HA-n1/n2/n3; 2, 4, 6 represent their linearized products of 5206bp, 5397bp and 5355bp, respectively. M1: λ-EcoT14 I digest (TaKaRa, Tokyo, Japan); M2: DL5,000 DNA Marker (TaKaRa, Tokyo, Japan).

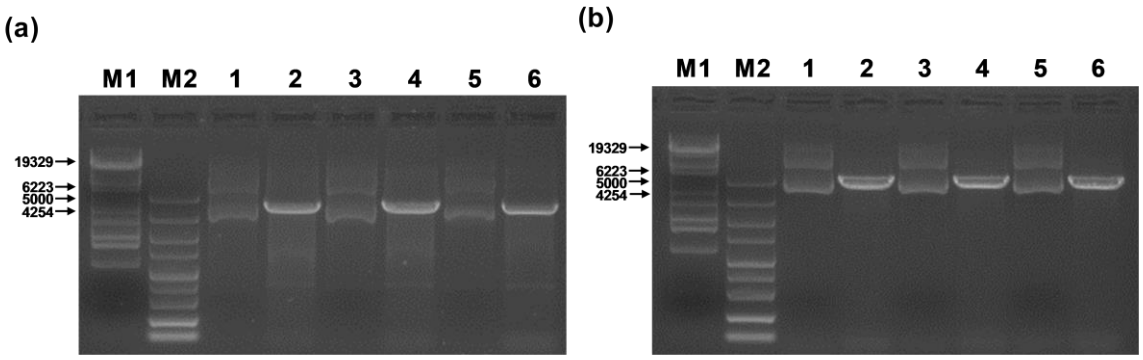
Figure S2. The gating strategys of flow cytometry to detect the percentage of EGFP positive cells. (**a**) The control group. (**b**) The Cap-mEGFP-n1 group. (**c**) The Cap-mEGFP-n2 group. (**d**) The Cap-mEGFP-n3 group.

Figure S3. Size distributions of (**a**) LNP. (**b**) LNP-Man. (**c**) LNP/mH3HA. (**d**) LNP-Man/mH3HA (N/P=10:1).

Table S1. Sequences of tested UTR configurations.

Table S2. Mean size (d. nm) of LNPs and LNPs/mRNA.

Table S3. Zeta potential (mV) of LNPs and LNPs/mRNA.



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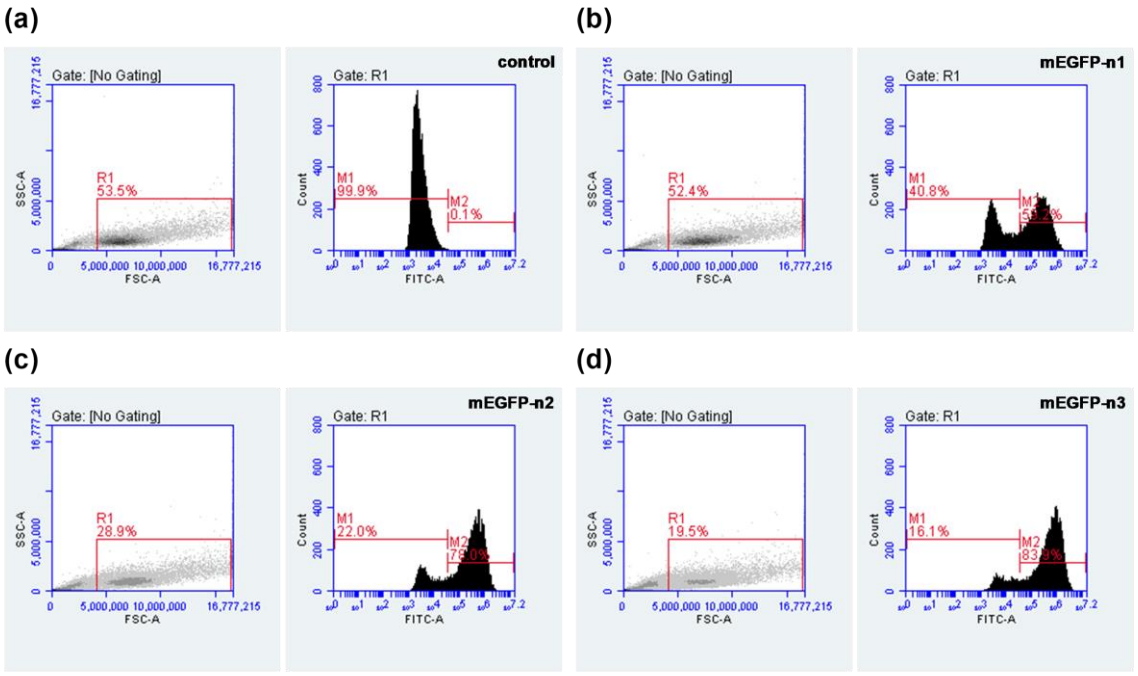

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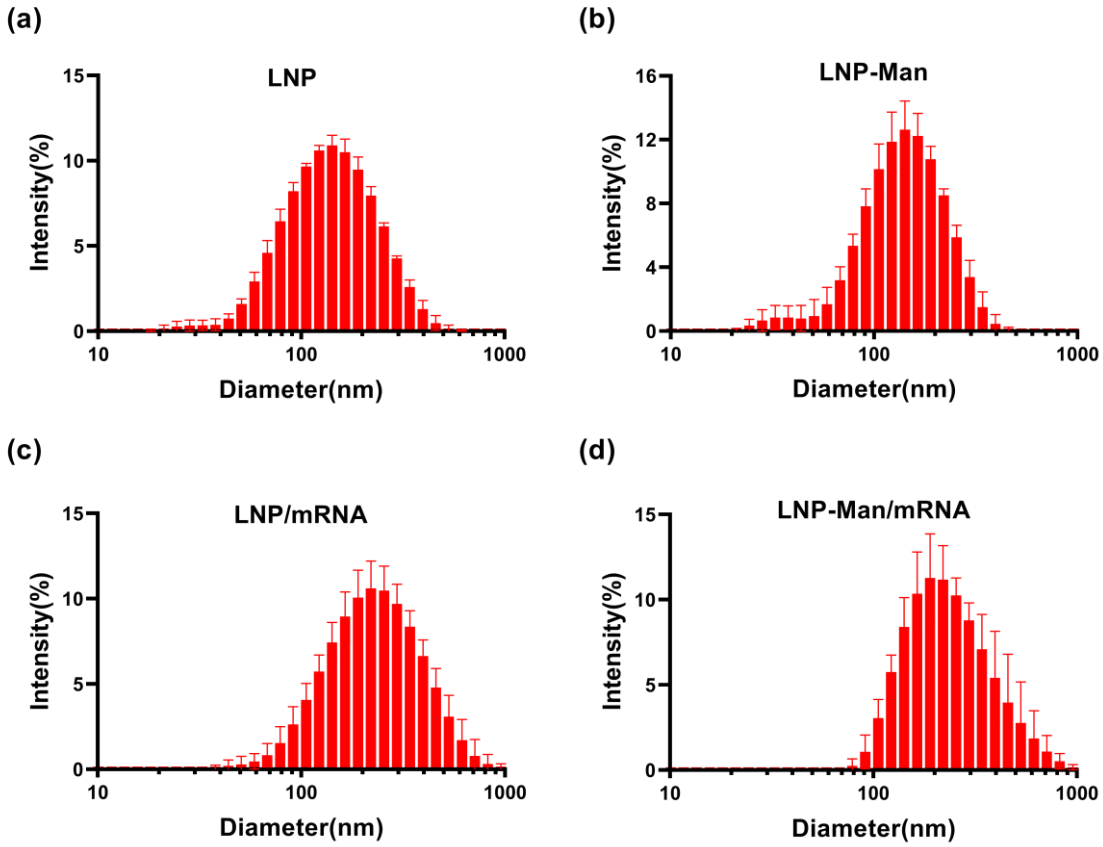

Figure S3. Size distributions of (**a**) LNP. (**b**) LNP-Man. (**c**) LNP/mH3HA. (**d**) LNP-Man/mH3HA (N/P=10:1).

Table S1. Sequences of tested UTR configurations.

IVT-mRNA-n1 ● 5′UTR (*α*-globin): AAATAAGAGAGAAAAGAAGAGTAAGAAGAAATATAAGA ● 3′UTR (*α*-globin): GCTGGAGCCTCGGTGGCCATGCTTCTTGCCCCTTGGGCCTCCCCCCAGCCCC TCCTCCCCTTCCTGCACCCGTACCCCCGTGGTCTTTGAATAAAGTCTGAGTG GGCGGC
IVT-mRNA-n2 ● 5′UTR (β-globin-1): CAGGGCAGAGCCATCTATTGCTTACATTTGCTTCTGACACAACTGTGTTCAC TAGCAACCTCAAACAGACACC ● 3′UTR (2β-globin): AGCTCGCTTTCTTGCTGTCCAATTTCTATTAAAGGTTCCTTTGTTCCCTAAGT CCAACTACTAAACTGGGGGATATTATGAAGGGCCTTGAGCATCTGGATTCT GCCTAATAAAAAACATTTATTTTCATTGCAGCTCGCTTTCTTGCTGTCCAATT TCTATTAAAGGTTCCTTTGTTCCCTAAGTCCAACTACTAAACTGGGGGATAT TATGAAGGGCCTTGAGCATCTGGATTCTGCCTAATAAAAAACATTTATTTTC ATTGC

IVT-mRNA-n3

- 5′UTR (β-globin-2):

AGAGCGGCCGCTTTTTCAGCAAGATTAAGCCCAGGGCAGAGCCATCTATTG
CTTACATTTGCTTCTGACACAACTGTGTTCACTAGCAACCTCAAACAGACA
CC

- 3′UTR (2β-globin):

AGCTCGCTTTCTTGCTGTCCAATTTCTATTAAAGGTTCCTTTGTTCCCTAAGT
CCAACTACTAAACTGGGGGATATTATGAAGGGCCTTGAGCATCTGGATTCT
GCCTAATAAAAAACATTTATTTTCATTGCAGCTCGCTTTCTTGCTGTCCAATT
TCTATTAAAGGTTCCTTTGTTCCCTAAGTCCAACTACTAAACTGGGGGATAT
TATGAAGGGCCTTGAGCATCTGGATTCTGCCTAATAAAAAACATTTATTTTC
ATTGC

Table S2. Mean size (d. nm) of LNPs and LNPs/mRNA.

Materials	—	+ mRNA	Change folders
LNP	119.8	203.5	1.70 ↑
LNP-Man	118.3	231.5	1.96 ↑

Table S3. Zeta potential (mV) of LNPs and LNPs/mRNA.

Materials	—	+ mRNA	Change folders
LNP	35.5	18.3	0.52 ↓
LNP-Man	39.3	18.4	0.47 ↓