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Supplemental Information

The Opposing Effect of Type I IFN on the T Cell Response by Non-modified mRNA-Lipoplex Vaccines Is Determined by the Route of Administration

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Figure S1. T cell response upon s.c. delivery of mRNA-lipoplexes. Wild type, CD11c-Cre^{+/-}IFNAR^{fl/fl} mice and CD4-Cre^{+/-}IFNAR^{fl/fl} mice were immunized s.c. with 10 µg CleanCap OVA mRNA-lipoplexes (DOTAP/DOPE or RNAiMAX). Two weeks after the last immunization the induced T cell responses were determined. Spleens were isolated and the splenocytes were stimulated *in vitro* with OVA peptide for 16h. **(A)** The number of OVA-specific IFN-γ-secreting splenocytes was determined by enzyme linked immunosorbent spot (ELISpot). Data represent individual mice and the mean (n = 6 mice per group). **(B)** A mixture of CFSE-labeled cells pulsed with control (CFSE^{low}) or OVA peptide (CFSE^{high}) were adoptively transferred in a 1:1 ratio to mRNA-lipoplex immunized mice (s.c. route). Specific killing was analyzed 2 days later by flow cytometry. (n = 6 mice per group). Statistical analyses on data sets were performed by one-way ANOVA followed by Tukey's post hoc test. (ns, non significant; **, p < 0.01 ; ****, p < 0.0001).

Figure S2. T cell response upon i.v. delivery of mRNA-lipoplexes. Wild type mice, CD11c-Cre^{+/-}IFNAR^{fl/fl} mice and CD4-Cre^{+/-}IFNAR^{fl/fl} mice were immunized i.v. with 10 µg OVA mRNA-lipoplexes (DOTAP/DOPE or RNAiMAX). Two weeks after the last immunization the induced T cell responses were determined. Spleens were isolated and the splenocytes were stimulated *in vitro* with OVA peptide for 16h. **(A)** The number of OVA-specific IFN-γ-secreting splenocytes was determined by an ELISpot. Data represent individual mice and the mean (n = 6 mice per group). **(B)** A mixture of CFSE-labeled cells pulsed with control (CFSE^{low}) or OVA peptide (CFSE^{high}) were adoptively transferred in a 1:1 ratio to mRNA-lipoplex immunized mice (i.v. route). Specific killing was measured 2 days later by flow cytometry. Data represent individual mice and the mean (n = 6 mice per group). Statistical analyses on data sets were performed by one-way ANOVA followed by Tukey's post hoc test. (ns, non-significant; *, p < 0.05).

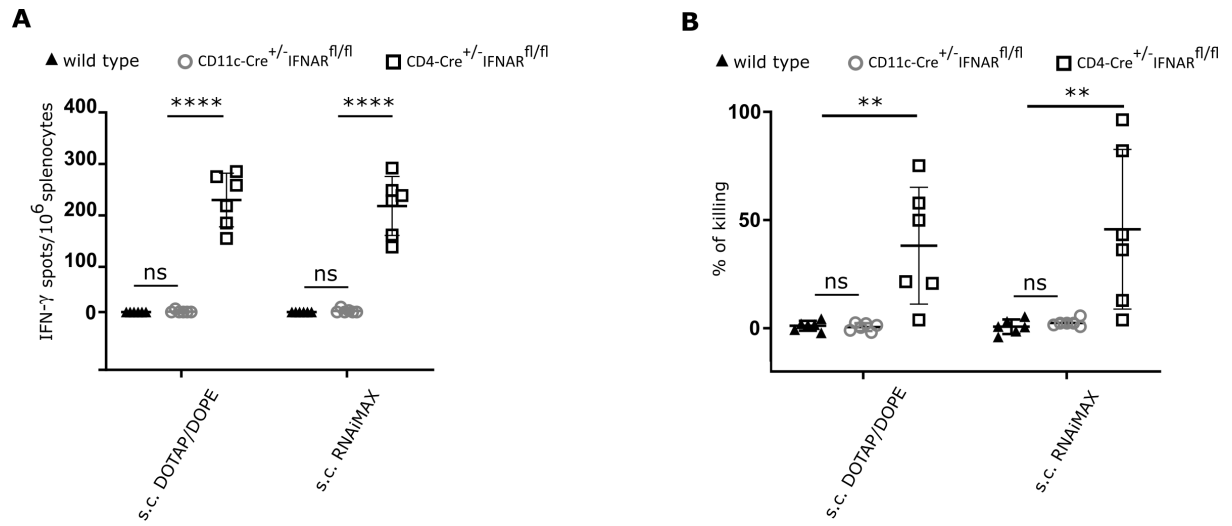


Figure S1. T cell response upon s.c. delivery of mRNA-lipoplexes.

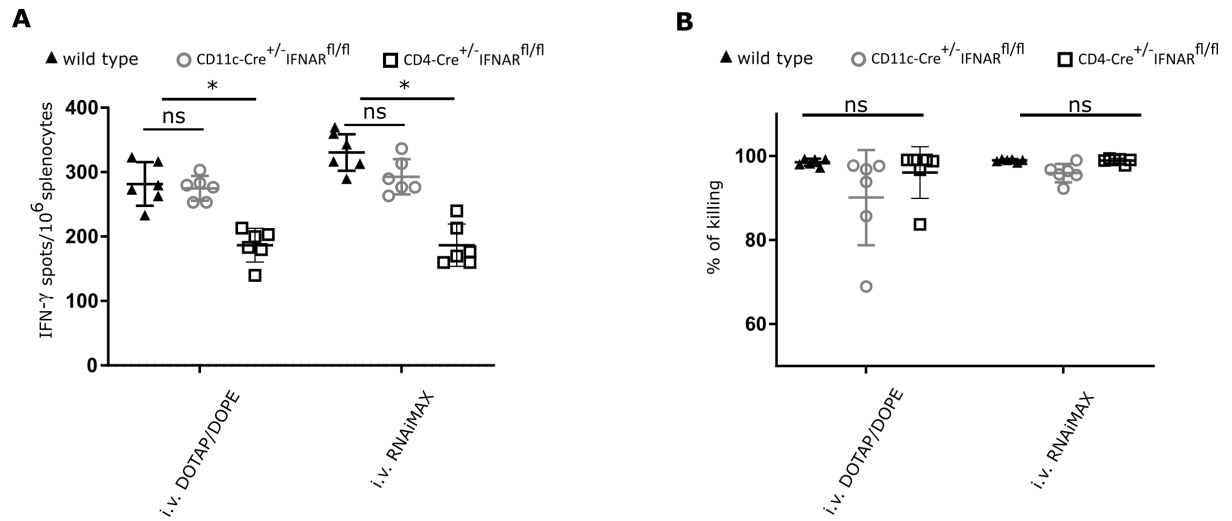


Figure S2. T cell response upon i.v. delivery of mRNA-lipoplexes.