Supplementary Materials for

Lipid nanoparticle-encapsulated mRNA antibody provides long-term protection against SARS-CoV-2 in mice and hamsters

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Materials and Methods

SDS-PAGE and Western Blotting

293T cell were seeded in T175 cell culture flasks at 10^6 cells/flasks. Eighteen hours later, the cells were transfected with equal molar of Heavy and Light chain of original HB27 antibody or mRNA-HB27 using Lipofectamine™ 3000 Transfection Reagent (Thermo Fisher Scientific). After 6 h, the medium was replaced with Opti-MEM™ I Reduced Serum Medium (Thermo Fisher Scientific). The supernatant was collected at 48 h after transfection, clarified by centrifugation at 1000 ×g, and then mixed with 5×SDS loading buffer. The samples were loaded for SDS-PAGE. The secreted HB27 protein was then detected by Western blotting with anti-human IgG-Fc/HRP and goat anti-human IgG F(ab')2/HRP antibody (Thermo Fisher Scientific).

Bio-layer interferometry

The binding kinetic affinity between SARS-CoV-2 RBD-Fc and HB27 was measured by gator (Probe life). Recombinant SARS-CoV-2 RBD-Fc protein (100 nM) was captured by anti-HIgG Fc probes (Probe life). Then probes were individually inserted into buffer (0.2% IgG free BSA and 0.01% tween20 in PBS) containing HB27 at different concentrations (from 12.5 nM to 0.8 nM) for association and then inserted into buffer (0.2% IgG free BSA and 0.01% tween20 in PBS) for disassociation. The wave shift was analyzed by gator software and the data were analyzed by Prism.