

Supplementary information, Fig. S5. Design and characterization of the I-P-R-F (mouse), I-R-F (human), and I-P-R-F (human) vaccines. (a) The Schematic diagram of the I-P-R-F fusion protein. The showing structural elements contain a mouse IFN α 4a (IFN α), (G4S) $_4$ linker (linker), Pan DR epitope (Pan), receptor-binding domain (RBD), immunoglobulin Fc fragment (Fc). (b) Size exclusion chromatography of mouse I-P-R-F, human I-R-F, and human I-P-R-F was performed on a Superdex200 Increase Column. The ultraviolet absorption at 280 nm is shown. The insert pictures show the SDS-PAGE of the eluted samples. (c) Real-time association and dissociation profiles of RBD, RBD-Fc, mouse I-R-F, mouse I-P-R-F, human I-R-F, and human I-P-R-F bound to hACE2. The KD value was calculated by the software BIA evaluation Version 4.1 (GE Healthcare). (d) The bioactivity of IFN α contained in mouse I-P-R-F was measured by an anti-viral infection biological assay.

