

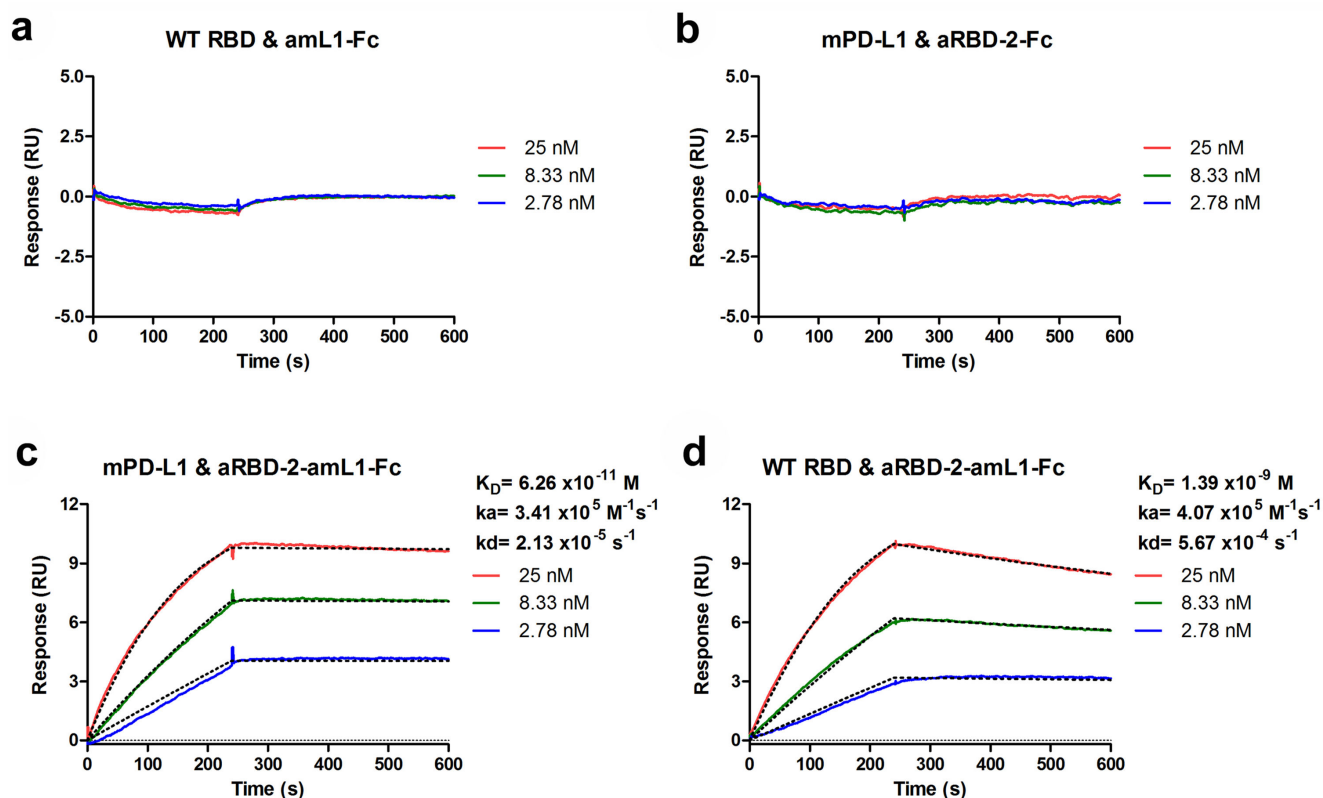


Fig. S8 RBD-binding characterization of a fusion constructed by fusing aRBD-2 to a RBD unrelated Nb. aRBD-2 was fused to a RBD unrelated Nb (an anti-mouse PD-L1 nanobody, PDB ID: 5DXW, named as amL1) and the human IgG1 Fc to form a fusion termed as aRBD-2-amL1-Fc. SPR showed that no binding were detected between the amL1-Fc and the WT SARS-CoV-2 RBD (**a**), and between aRBD-2 and the mouse PD-L1 (**b**). The aRBD-2-amL1-Fc fusion showed binding to both the mouse PD-L1 (**c**) and the RBD (**d**). The RBD binding affinity K_D of aRBD-2-amL1-Fc is 1.39 nM, which is similar to that of aRBD-2-Fc ($K_D = 1.47 \text{ nM}$).