A

gRBD-Fc
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RDISTEIYQAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYQPYRVVVLSFENLTAPATVCGPGGSGGSDKTHTCPPC
PAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVL
TVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWES
NGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK

gRBD-foldon
MKHLWFFLLLVAAPRWVLSNITNLCPFGEVFNATRFASVYAWNRKRISNCVADYSVLYNSTSFSTFKCYGVSPTKLN
DLCFTNVTADSFVIRGDEVRQIAPGQTGKIADYNYKLPDNFTGCVIAWNSNNLDSKVGGNYNYLYRLFRKSNLKPFE
RDISTEIYQAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYQPYRVVVLSFENLTAPATVCGPGGSGGGGSGPGGYIP
EAPRDGQAYVRKDGEWVLLSTFLGSGGGEPEA

NAP-gRBD
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AQLGHHPLVTLSEALKLTRVKEETKTSFHSKDIFKEILEDYKHLEKEFKELSNTAEKEGDKVTVTYADDQLAKLQKS
IWMLQAHLAGGGSGGGPGSGNITNLCPFGEVFNATRFASVYAWNRKRISNCVADYSVLYNSTSFSTFKCYGVSPTKL
NDLCFTNVTADSFVIRGDEVRQIAPGQTGKIADYNYKLPDNFTGCVIAWNSNNLDSKVGGNYNYLYRLFRKSNLKPF
ERDISTEIYQAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYQPYRVVVLSFENLTAPATVCGPGSGGGGEPEA

gRBD-ferritin
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FKCYGVSPTKLNDLCFTNVTADSFVIRGDEVRQIAPGQTGKIADYNYKLPDNFTGCVIAWNSNNLDSKVGGNYNYLY
RLFRKSNLKPFERDISTEIYQAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYQPYRVVVLSFENLTAPATVCGPGGG
SGGTGGDIIKLLNEQVNKEMNSANLYMSMSSWAYTHSLDGAGLFLFDHAAEEYEHAKKLIIFLNENNVPVQLTSISA
PEHKFEGLTQIFQKAYEHEQHISESINNIVDHAIKSKDHATFNFLQWYVAEQHEEEVLFKDILDKIELIGNENHGLY
LADQYVKGIAKSRKS

gRBD-mi3
MKHLWFFLLLVAAPRWVLSNITNLCPFGEVFNATRFASVYAWNRKRISNCVADYSVLYNSTSFSTFKCYGVSPTKLN
DLCFTNVTADSFVIRGDEVRQIAPGQTGKIADYNYKLPDNFTGCVIAWNSNNLDSKVGGNYNYLYRLFRKSNLKPFE
RDISTEIYQAGSTPCNGVEGFNCYFPLQSYGFQPTNGVGYQPYRVVVLSFENLTAPATVCGPGSSGSSGSGGSGGSMKM
EELFKKHKIVAVLRANSVEEAKKKALAVFLGGVHLIEITFTVPDADTVIKELSFLKEMGAIIGAGTVTSVEQARKAV
ESGAEFIVSPHLDEEISQFAKEKGVFYMPGVMTPTELVKAMKLGHTILKLFPGEVVGPQFVKAMKGPFPNVKFVPTG
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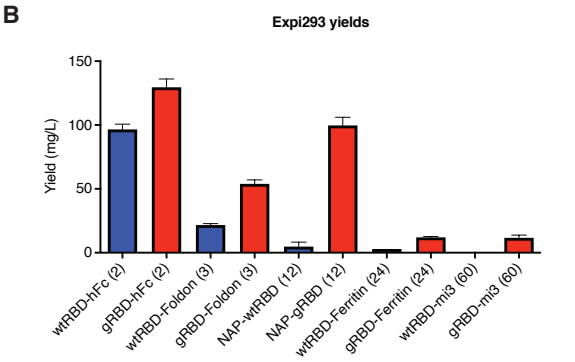
B



C

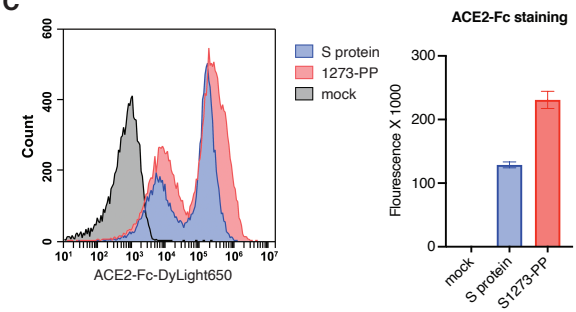


Fig. S4. Multivalent gRBD fusion proteins express more efficiently than their wtRBD counterparts. (**A**) Complete sequences of the multivalent gRBD fusion constructs used in these studies. Green indicated signal peptide; black, linker residues; blue, multivalent carrier protein; red, gRBD; purple, affinity tag. (**B**) Yields of purified wtRBD and gRBD multimers expressed from the CMV/R vector in Expi293 cells. Values reflect a minimum of two independent transfections. Error bars indicate s.d. (**C**) Flow cytometery of 293T cells transiently transfected with SARS-CoV2 S protein in the pCAGGS vector, or S1273-PP in the CMVR vector. Expression was measured by by staining with ACE2-Fc-DyLight650. Right panel indicates mean fluorescence intensity as determine from the histogram shown in the left panel.