

Figure 1

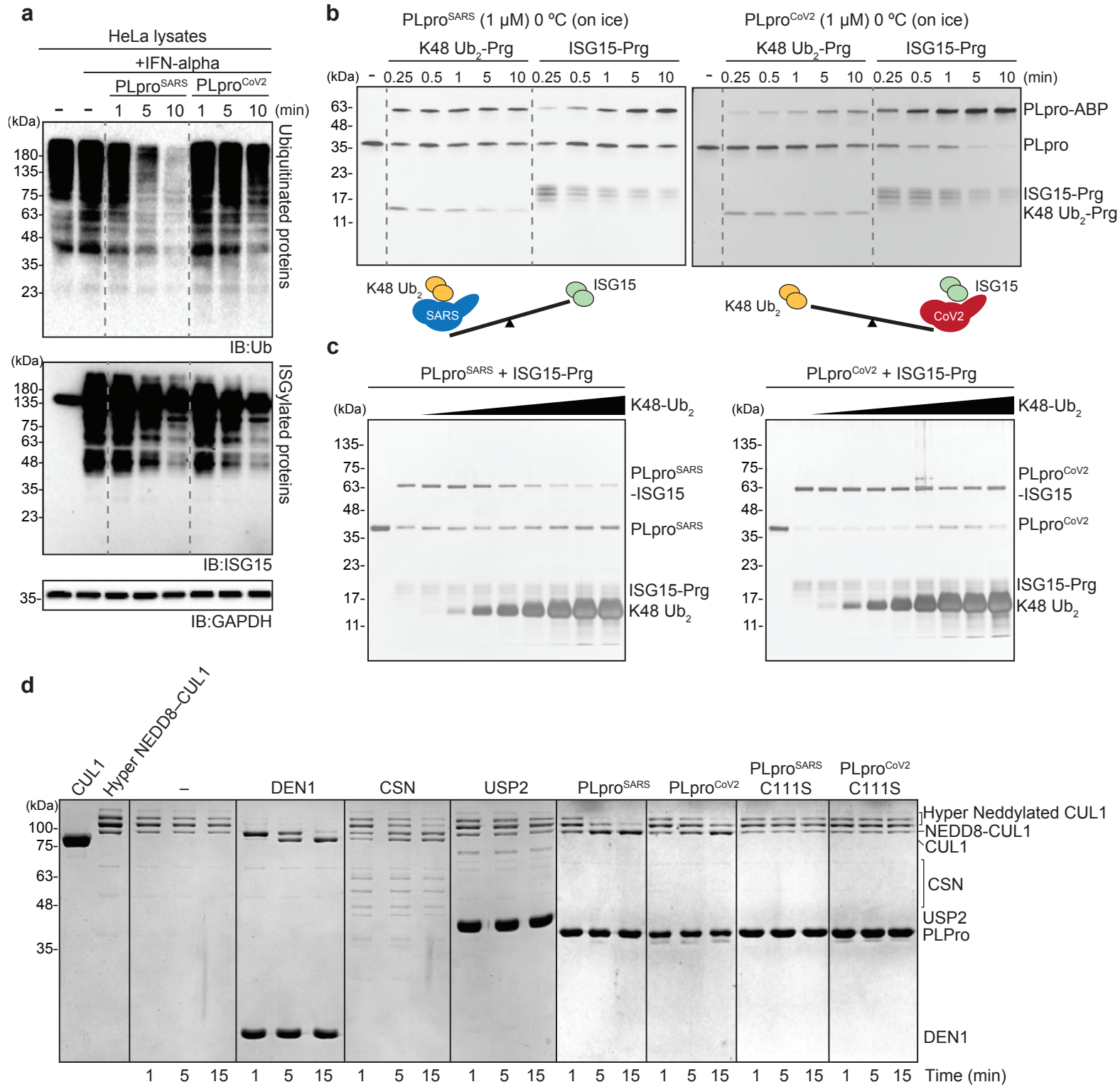


Figure 2

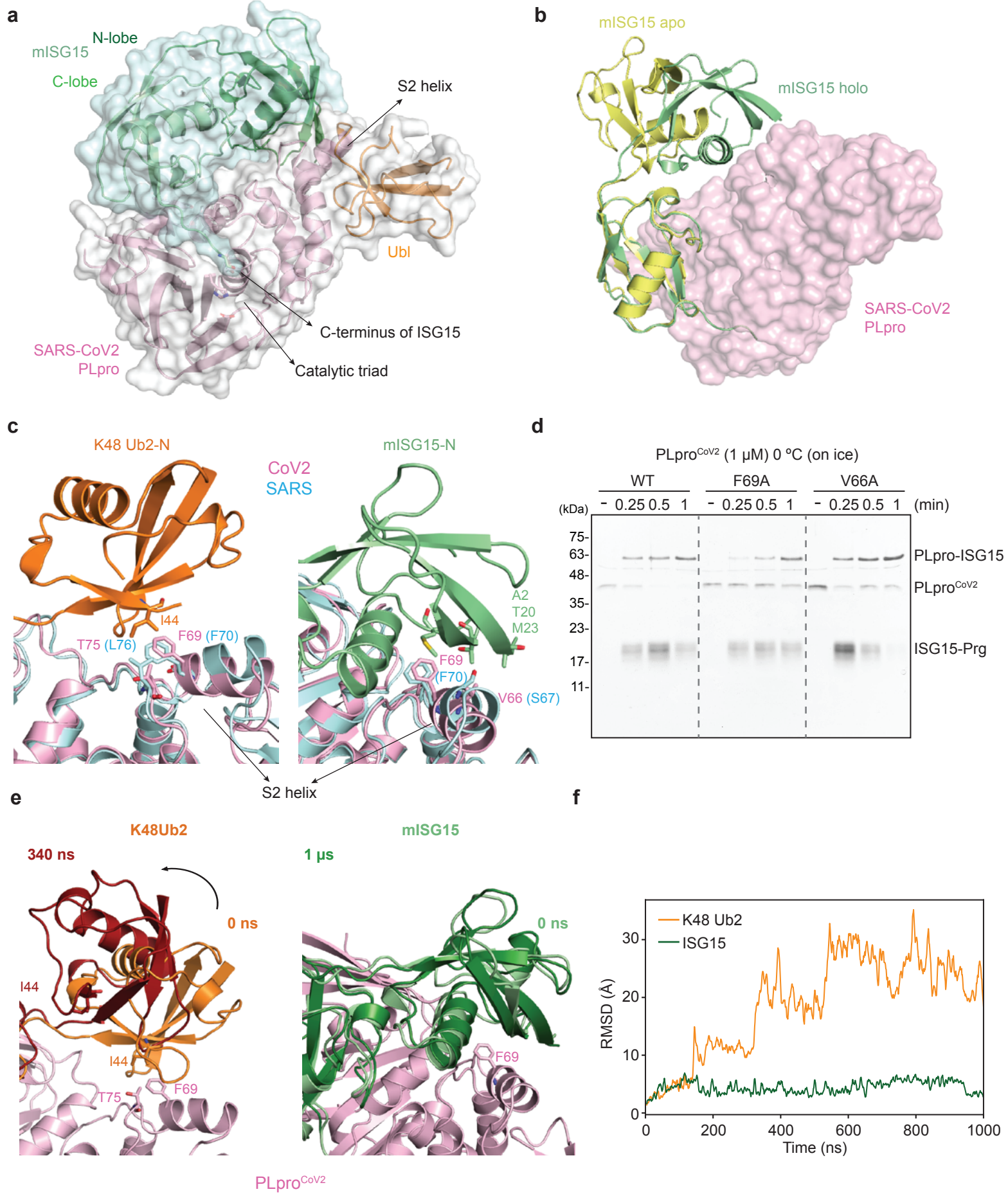
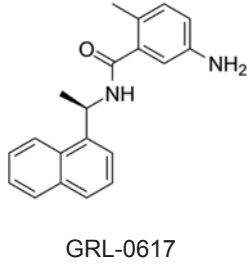
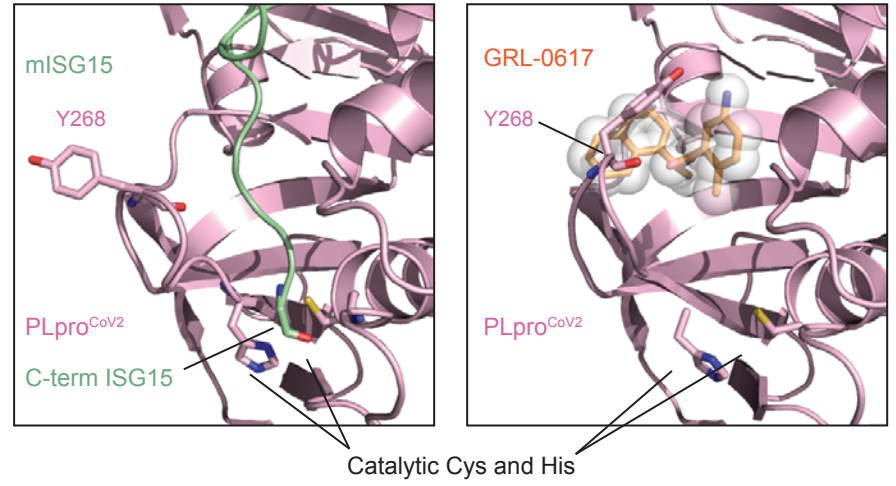


Figure 3

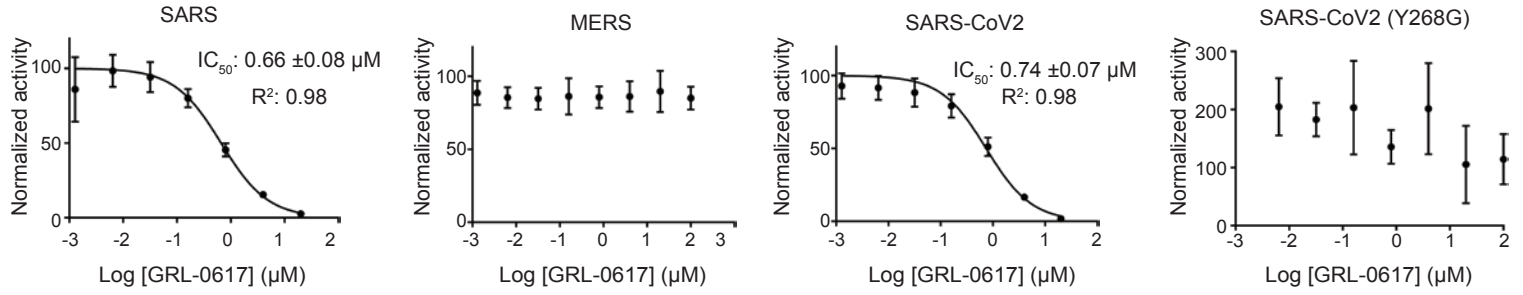
a



b

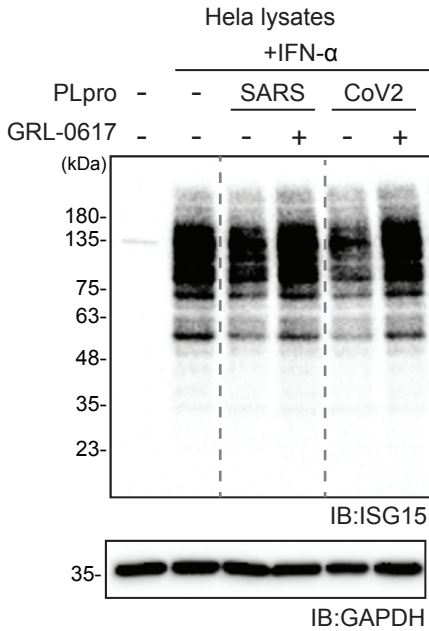


c



MERS WLLLSGTPNEKLVTTSTAPDFVAFNVFQGIETAVGHYVHARLKGGLLILKFDSTVSKTSDWKCKVTDDVLFPGQKYSSDCN-
SARS FVMMSAPPAEYKLLQGGT---FLCANEYTG-NYQCGHYTHITAKET-LYRIDGAHLTQMSEYKGPVTDVIFYKETSYYTTIIR-
SARS CoV2 FVMMSAPPAQYELKHGT---FTCASEYTG-NYQCGHYKHITSKET-LYCIDGALLTKSSEYKGPITDVFYKENSYYTTIIR-

d



e

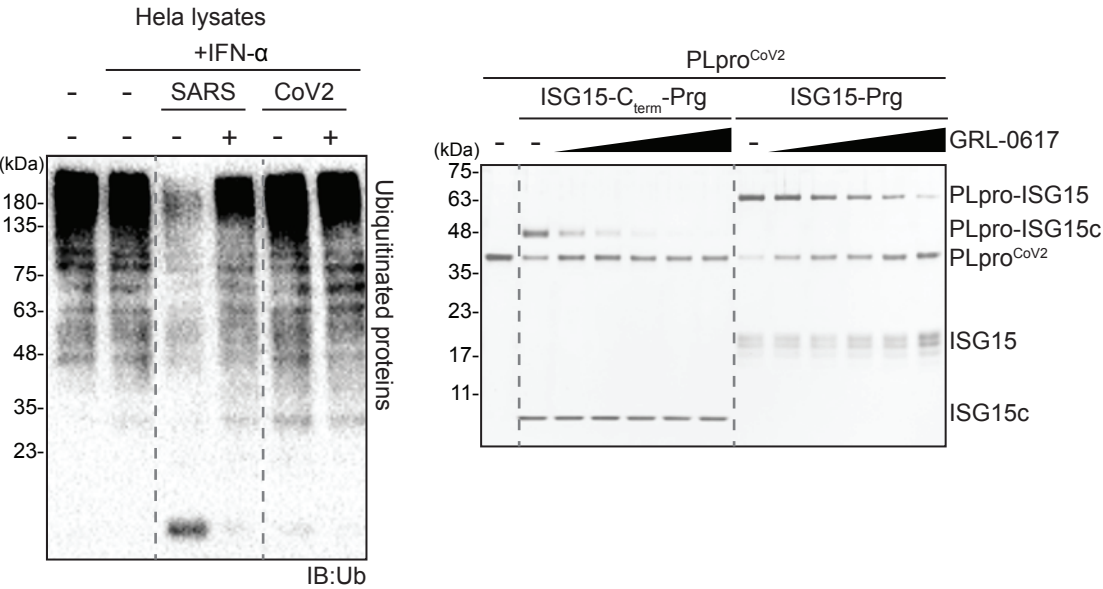


Figure 4

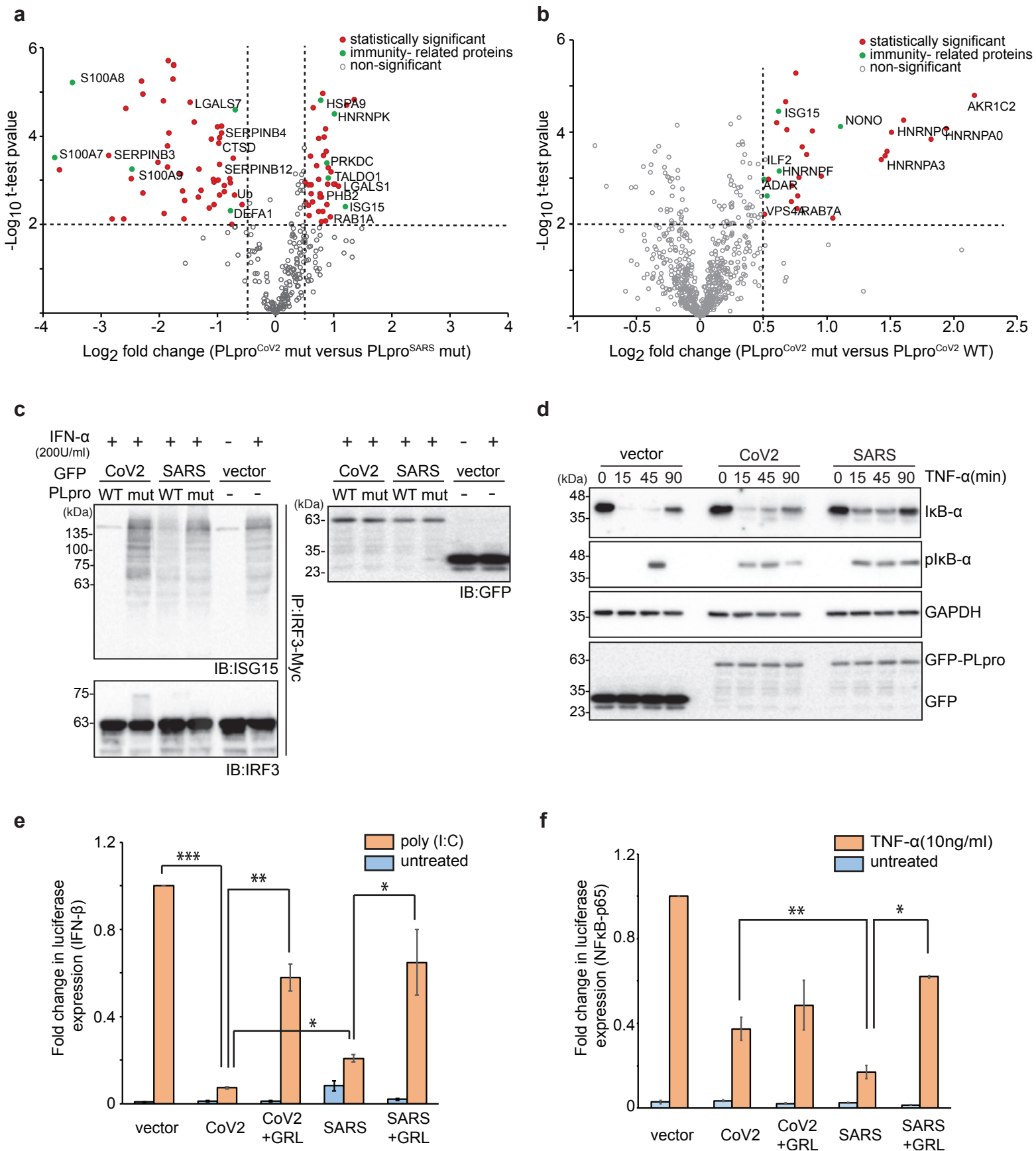
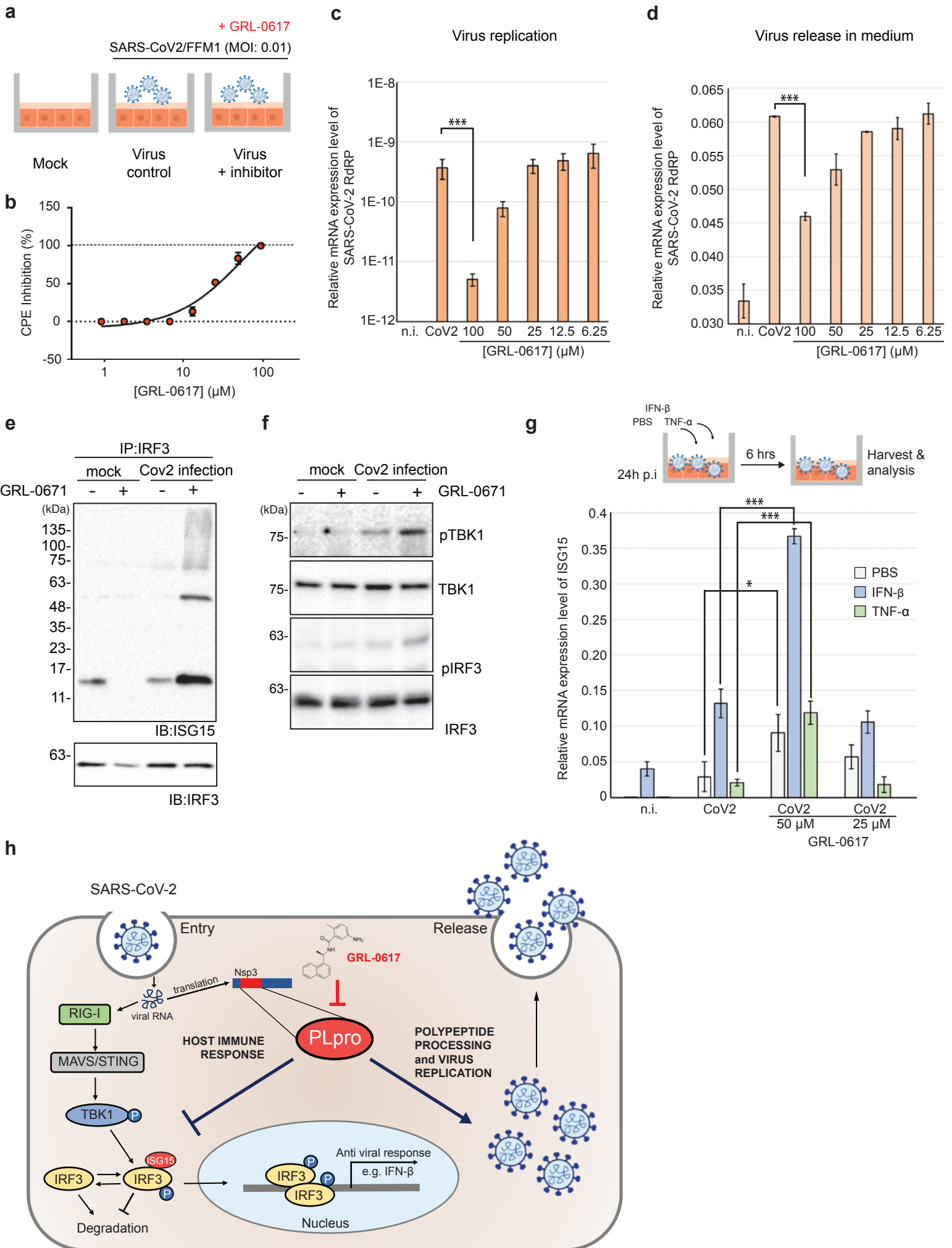


Figure 5

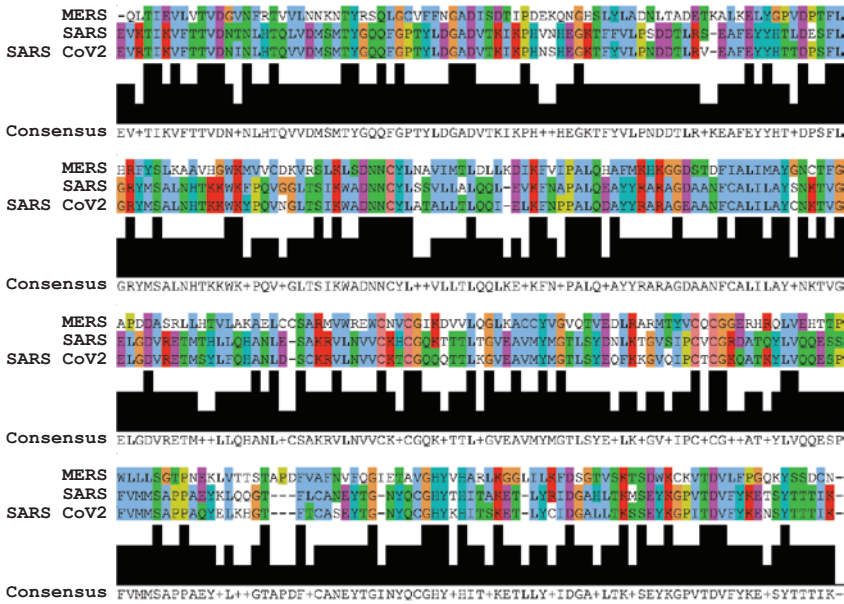


Extended data Fig. 1

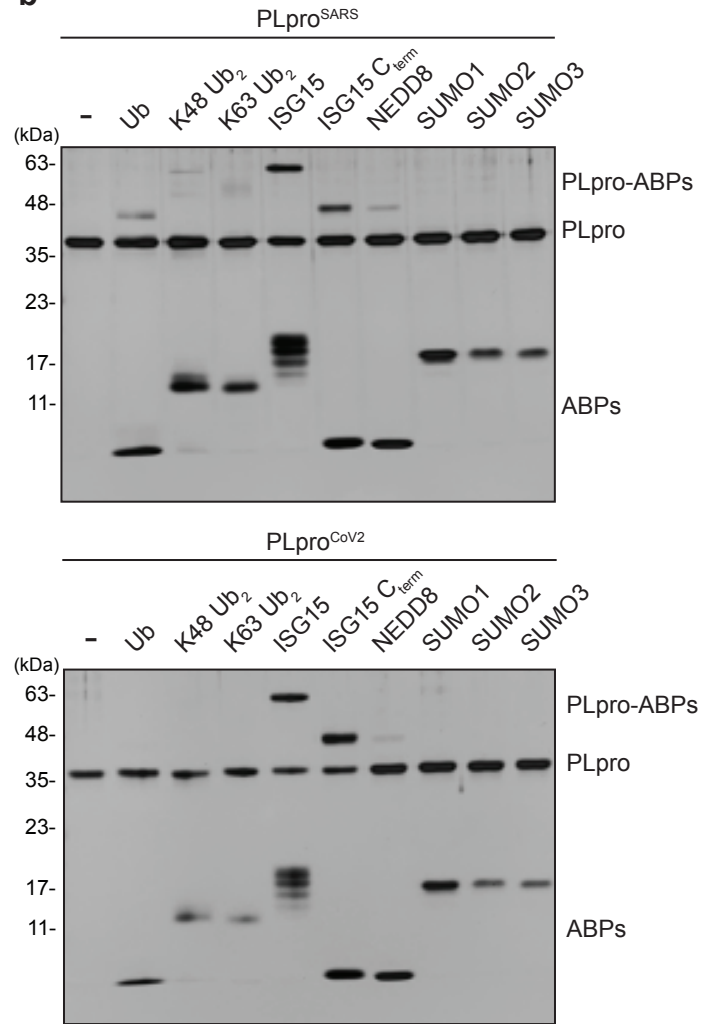
a

PLpro Sequence similarity (identity), (%)

	SARS	CoV2	MERS
SARS	100	88.6(82.9)	51.4(34.4)
CoV2		100	51.1(32.9)
MERS			100



b



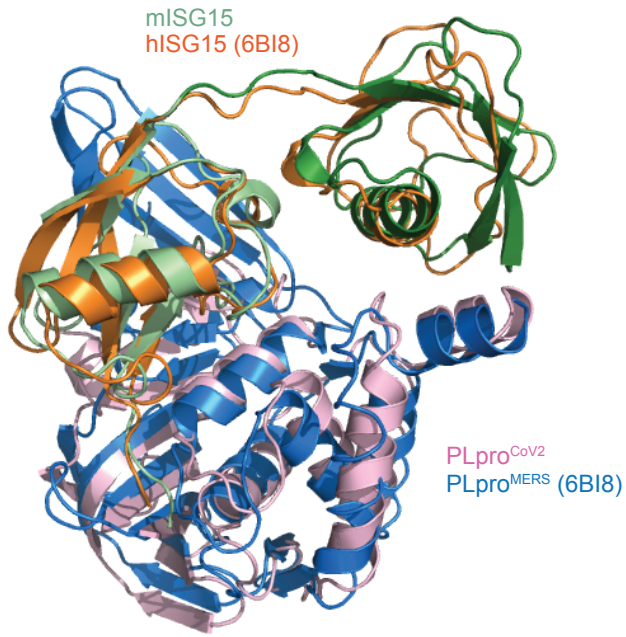
c

PLpro cleavage site

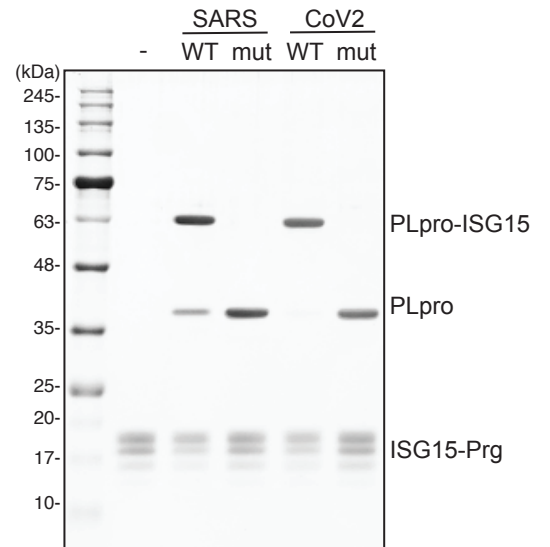
SARS-CoV2_nsp1/2 -NTK-HSSGVTRELMRELNGGAYT
SARS-CoV2_nsp2/3 -CAL-APNMMVTNNTFTLKGGAFT
SARS-CoV2_nsp3/4 -CATTRQVVNVVTTKIALKGGKIV
hUbiquitin -SDYNIQKESTLHLVLRRLRGG---
hISG15 -GEYGLKPLSTVFMNLRRLRGG---
hNEDD8 -ADYKILGGSVLHLVLAALRGG---
hSUMO1 -KELGMEEDVIEVYQEQTGG---
hSUMO2 -AQLEMEDEDVIDVFQQQTGG---
hSUMO3 -AQLEMEDEDVIDVFQQQTGG---

Extended data Fig. 2

a

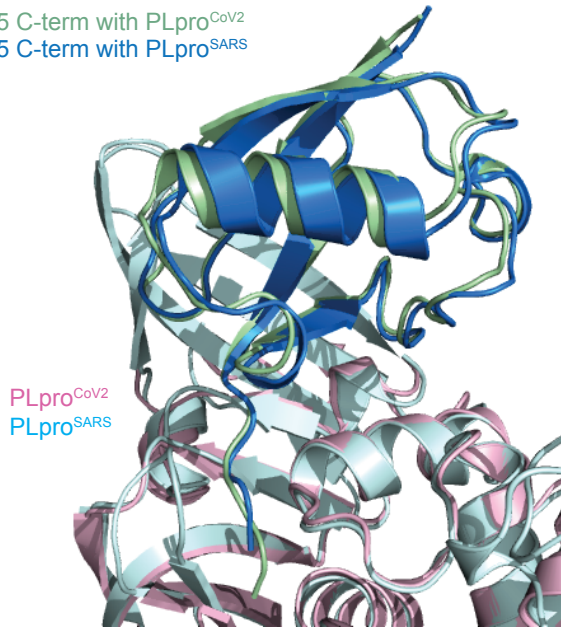


b



c

mISG15 C-term with PLpro^{CoV2}
mISG15 C-term with PLpro^{SARS}
(5TL7)



d

mISG15 C-term with PLpro^{CoV2}
K48 Ub₂ C-term with PLpro^{SARS}
(5E6J)

