

## Supplementary Figure 1

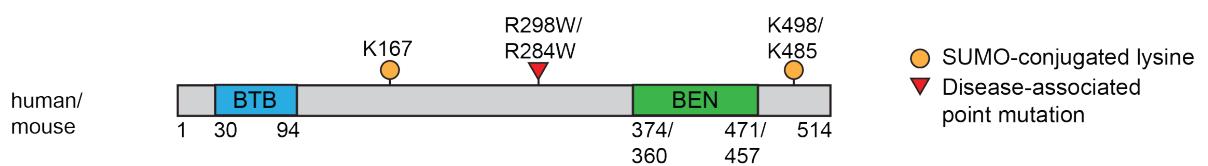
A

human NACC1                          286...EDGEEGMDEQY**R**QICNMYTMYSMMNVGQ...312  
 mouse Nacc1                            272...EDAGEEGTDEQY**R**QICNMYTMYSMLNVGQ...300

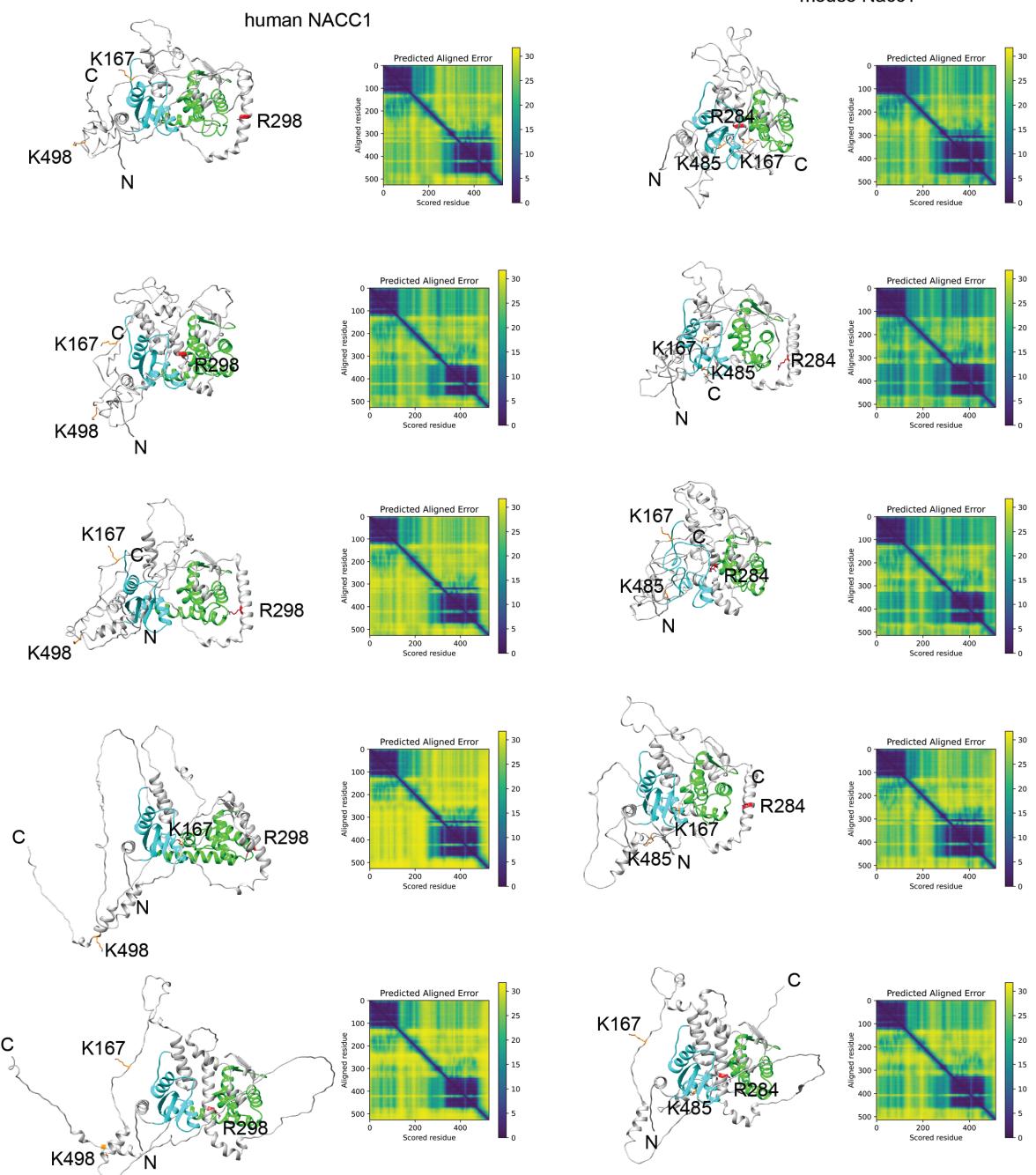
R298

R284

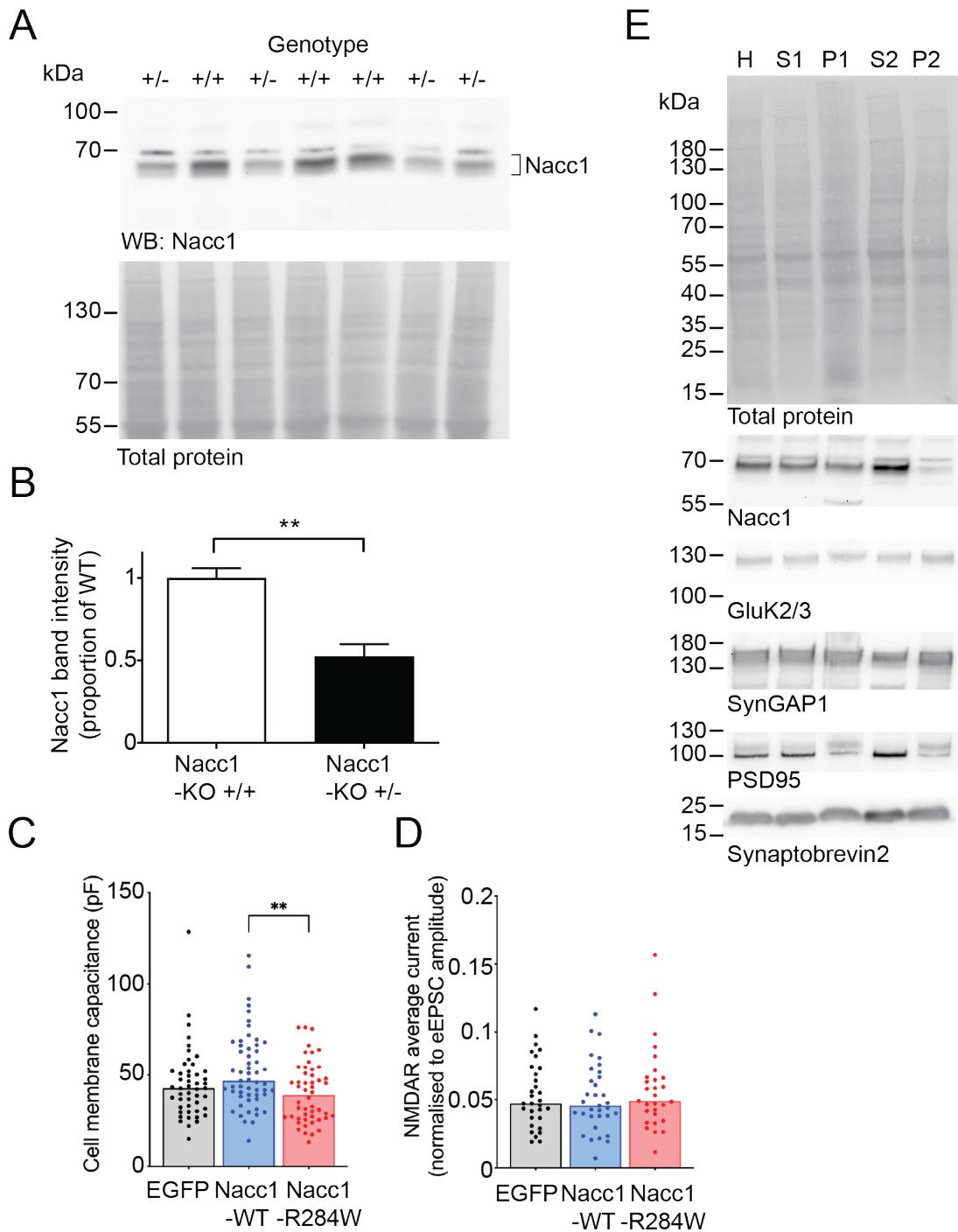
B



C

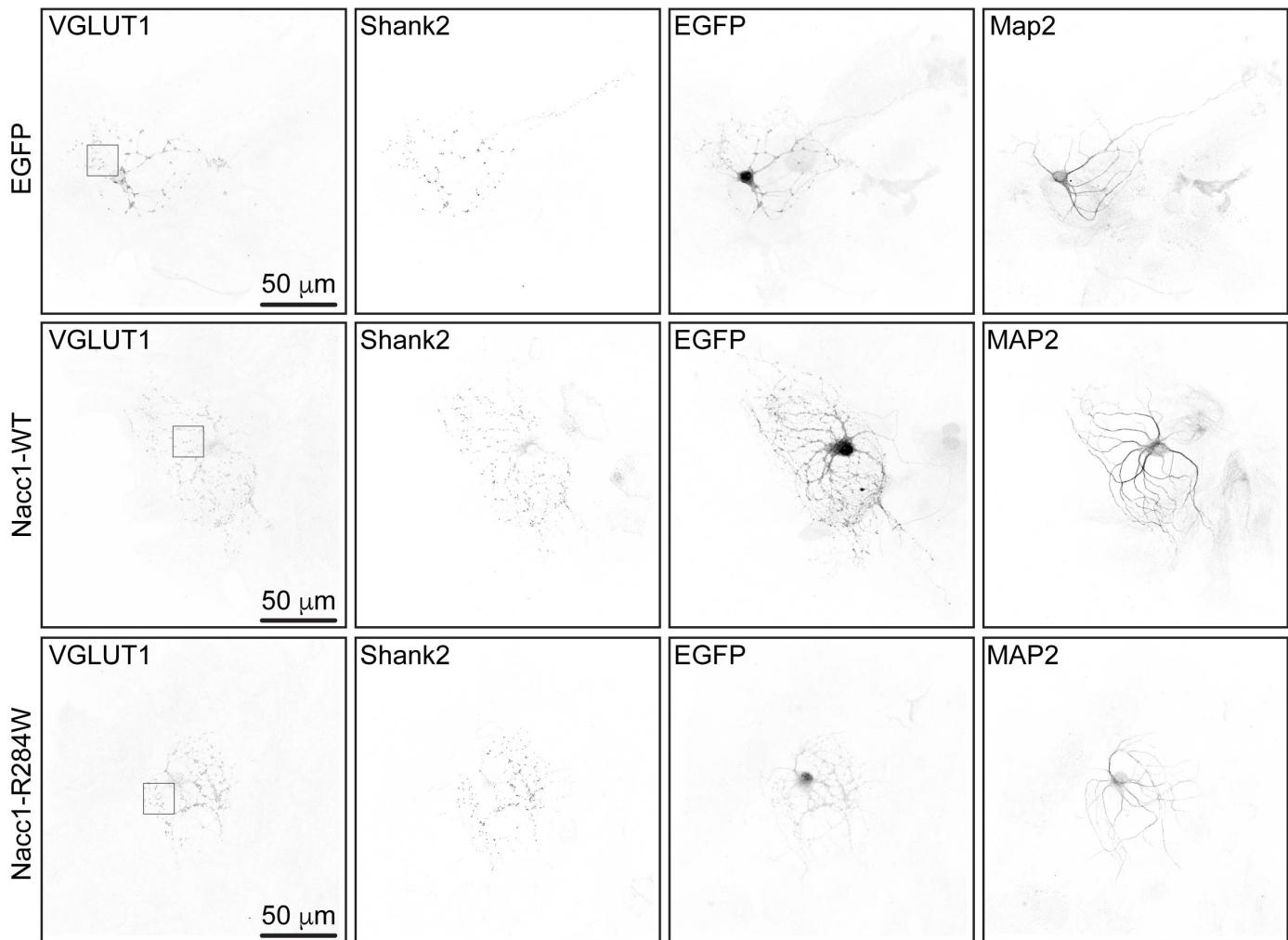


## Supplementary Figure 2

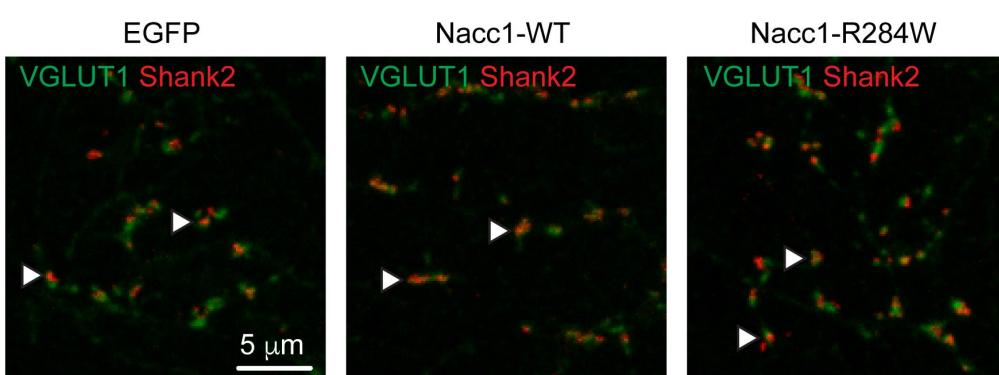


### Supplementary Figure 3

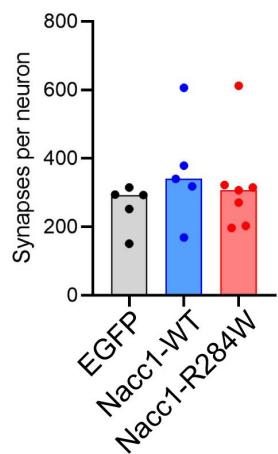
A



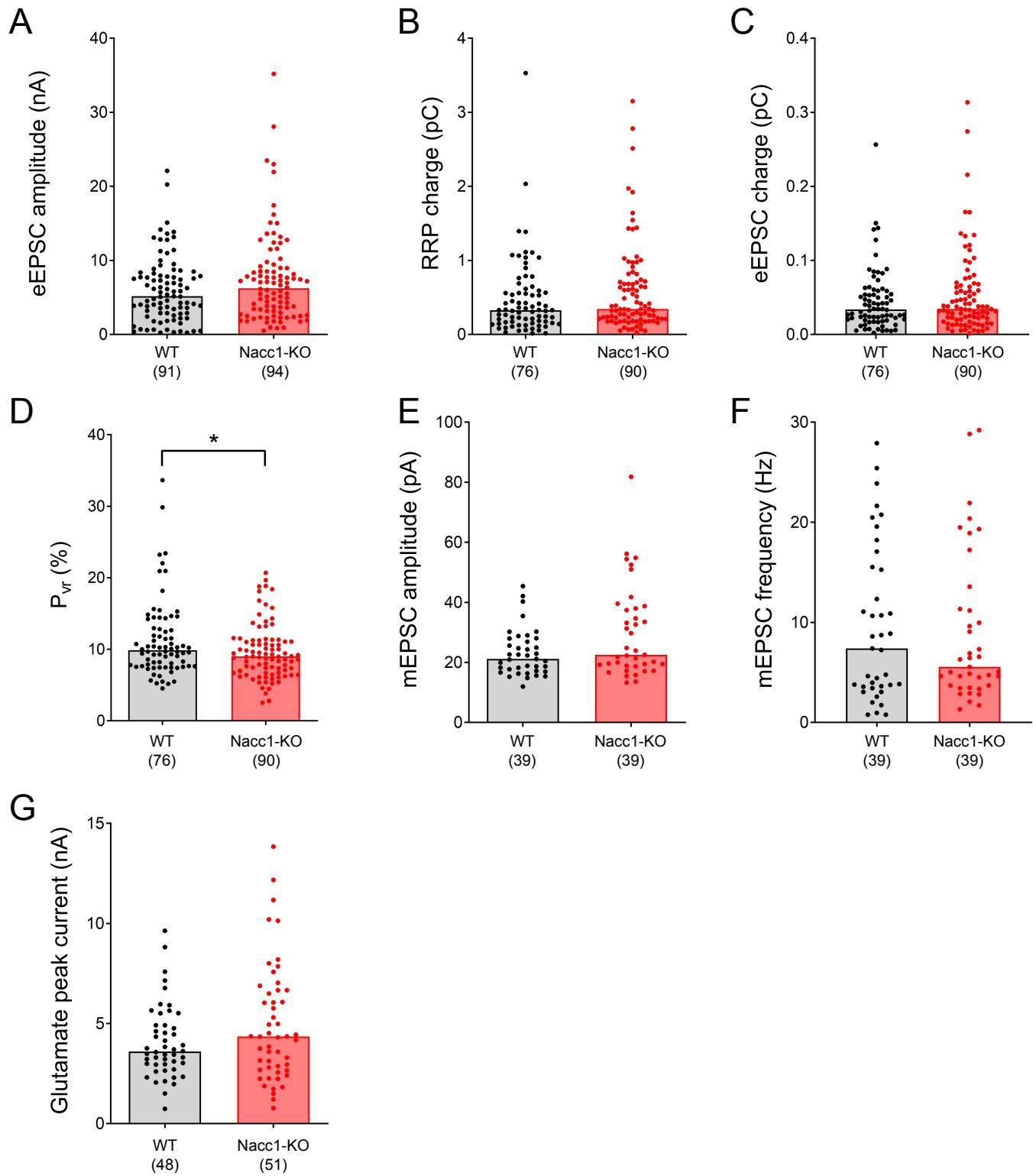
B



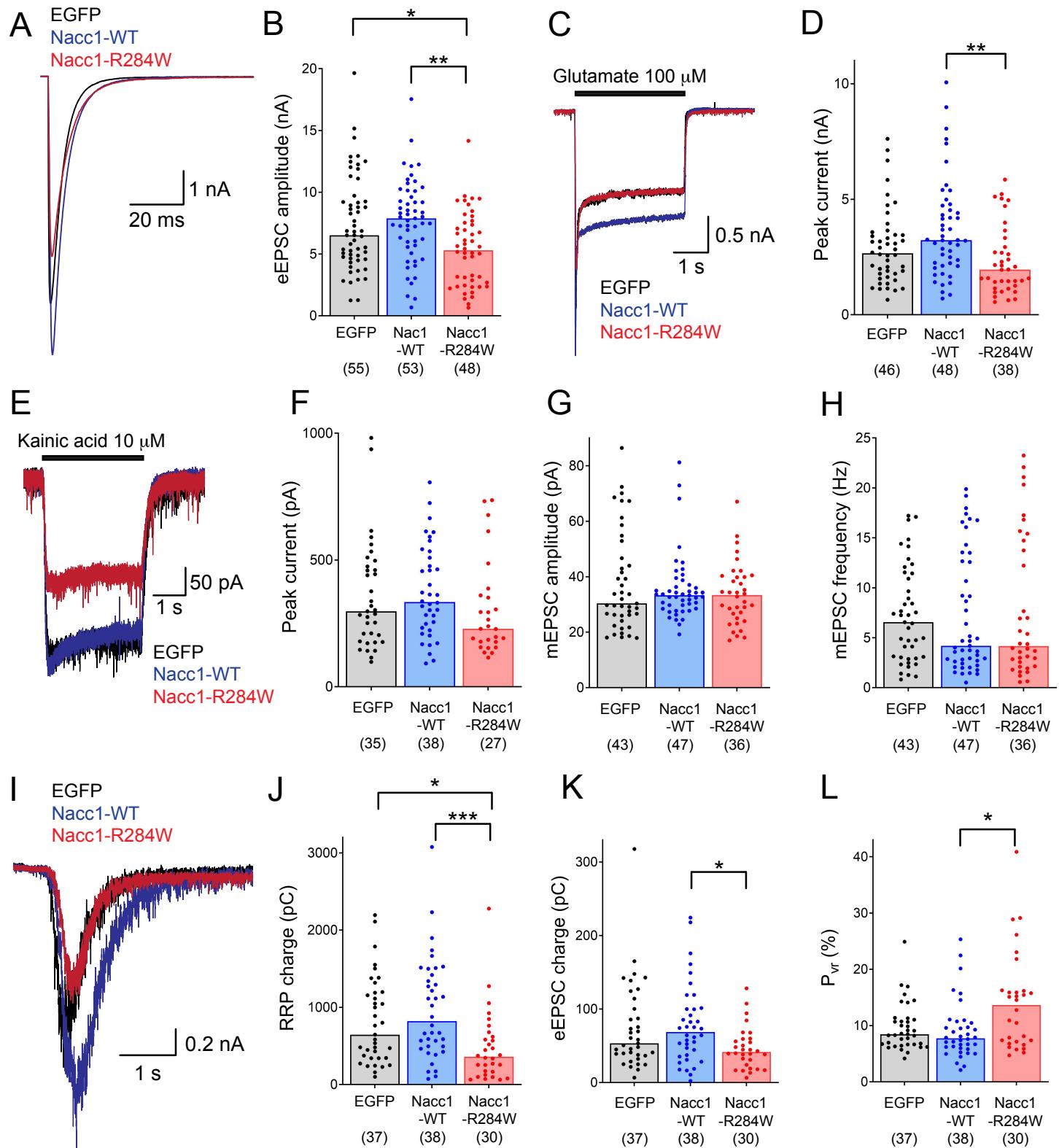
C



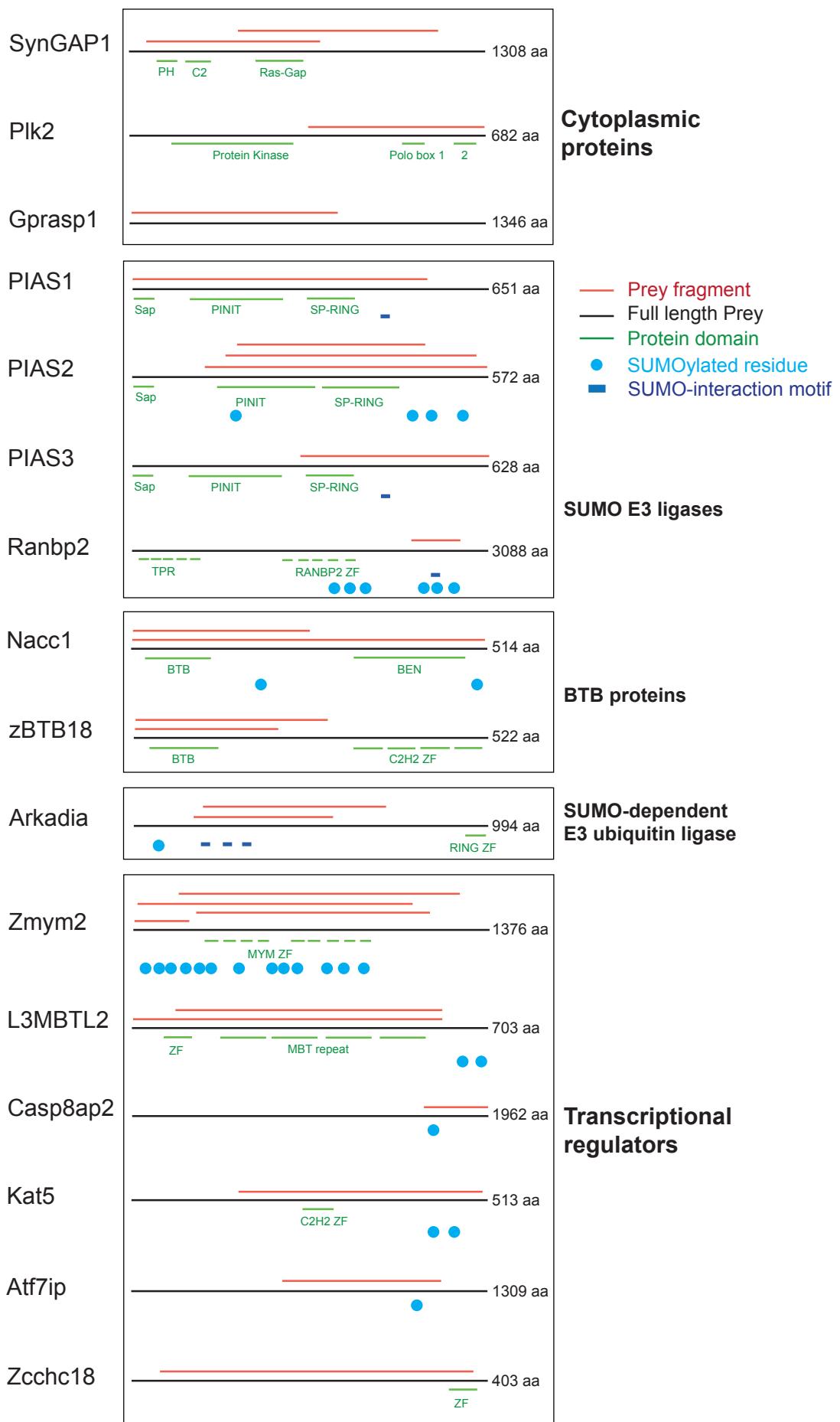
## Supplementary Figure 4



## Supplementary Figure 5

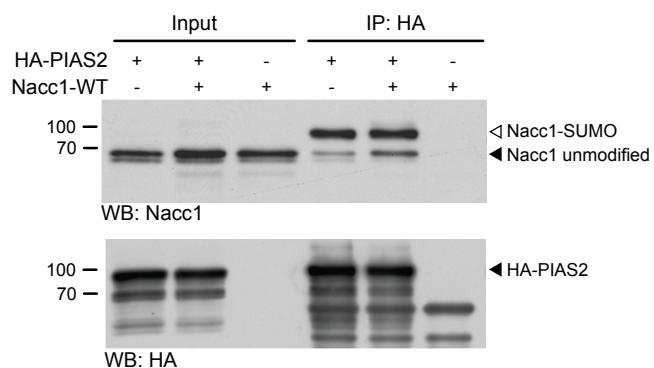


## Supplementary Figure 6

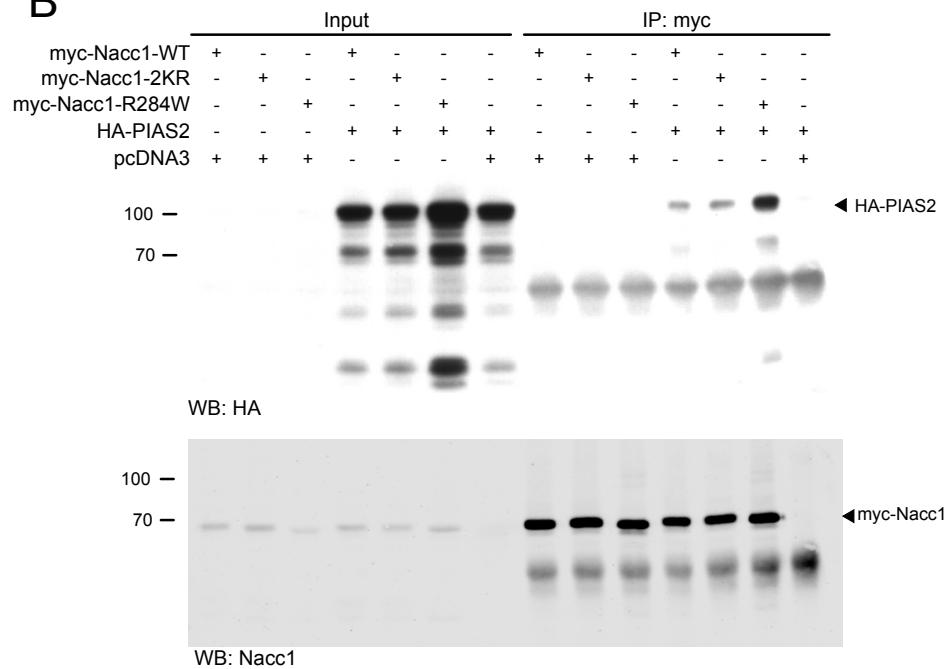


## Supplementary Figure 7

**A**

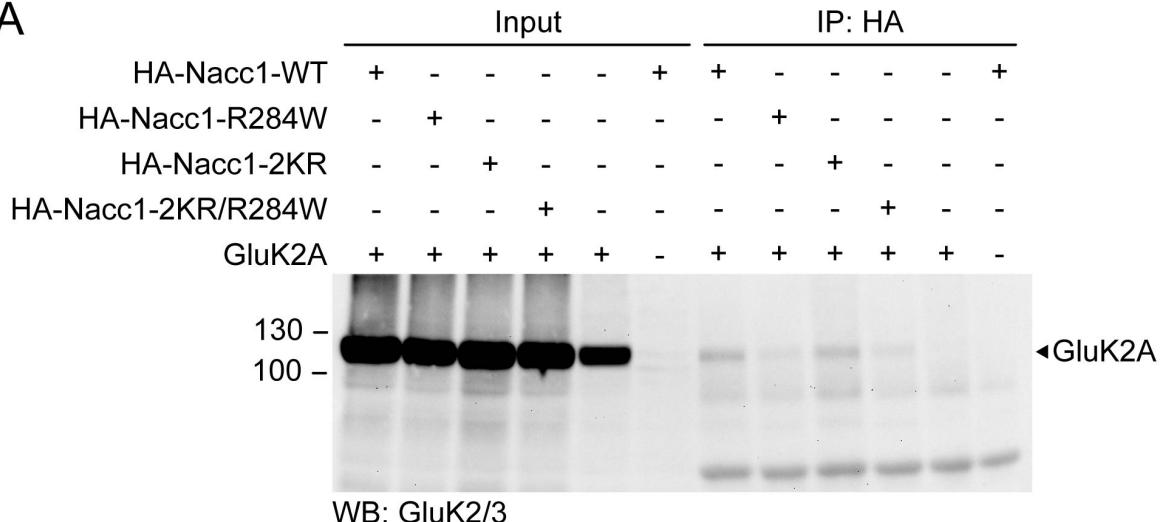


**B**

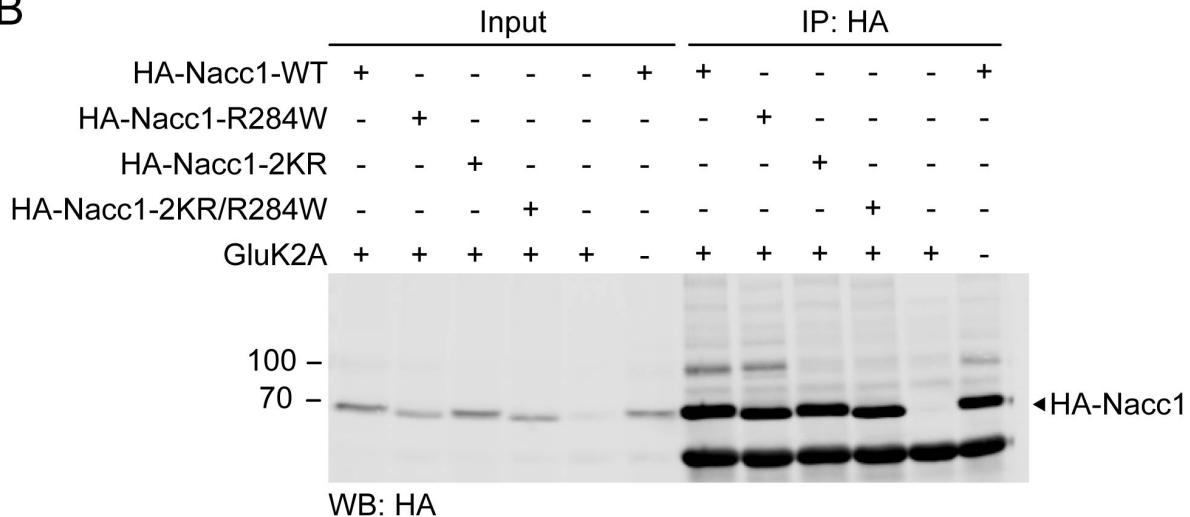


## Supplementary Figure 8

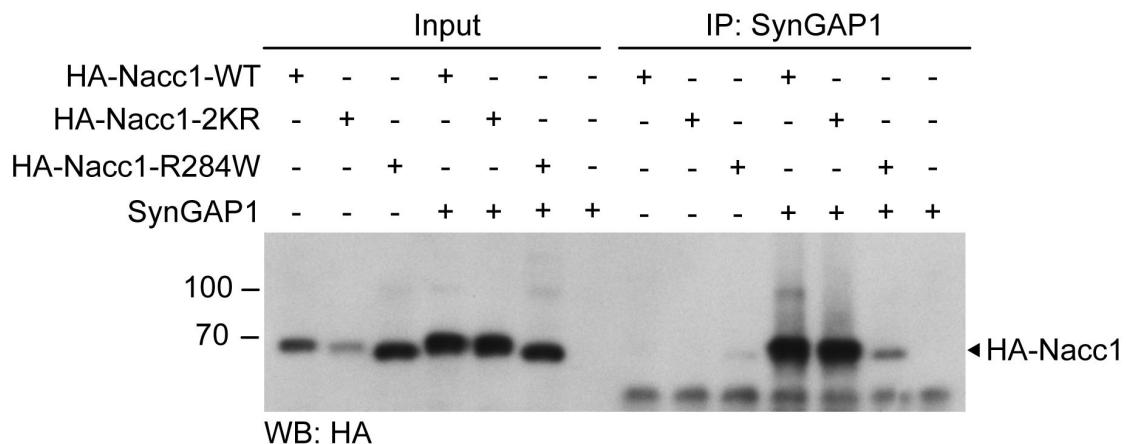
A



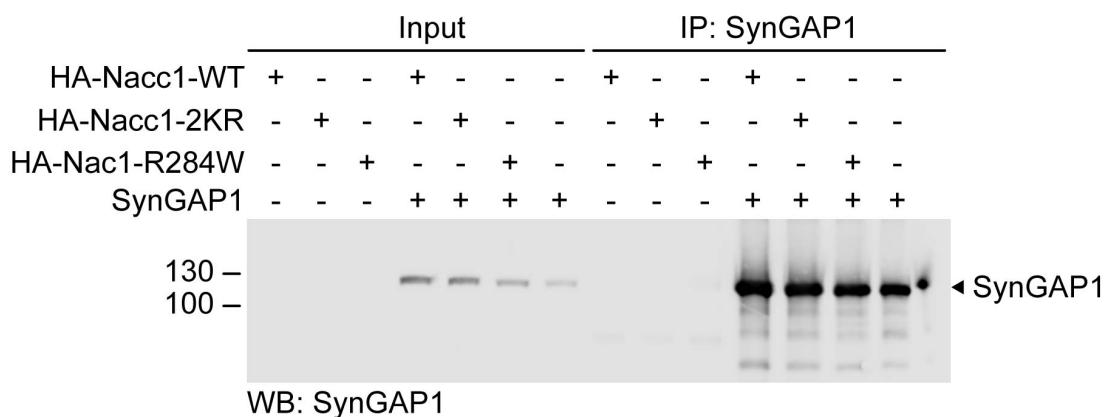
B



C



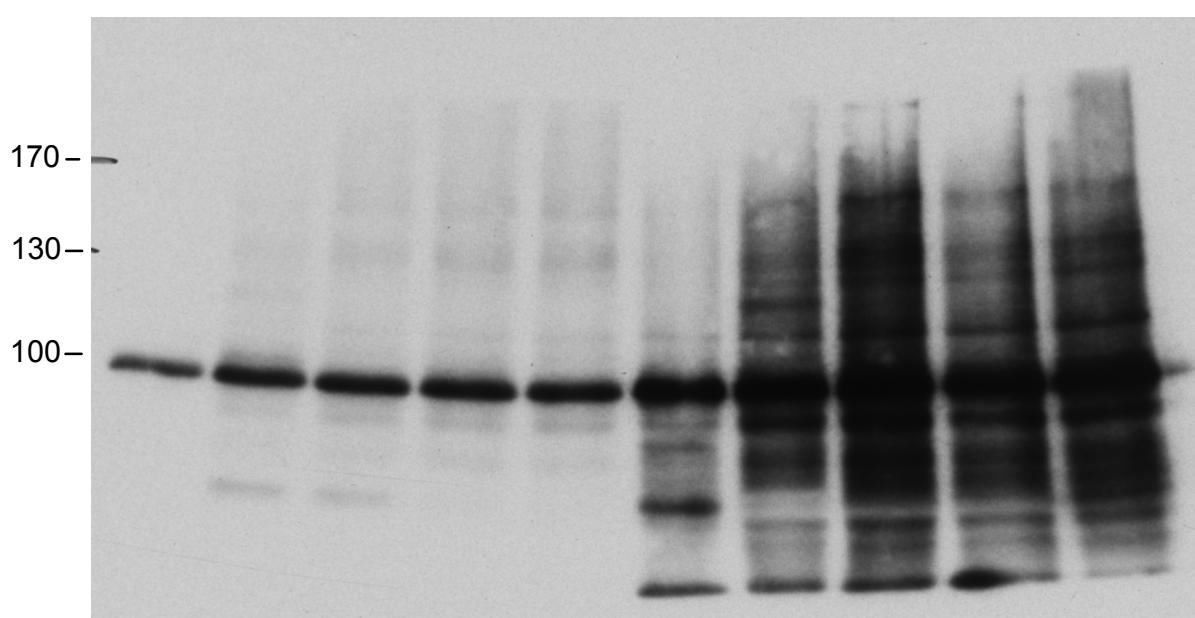
D



# Supplementary Figure 9

A

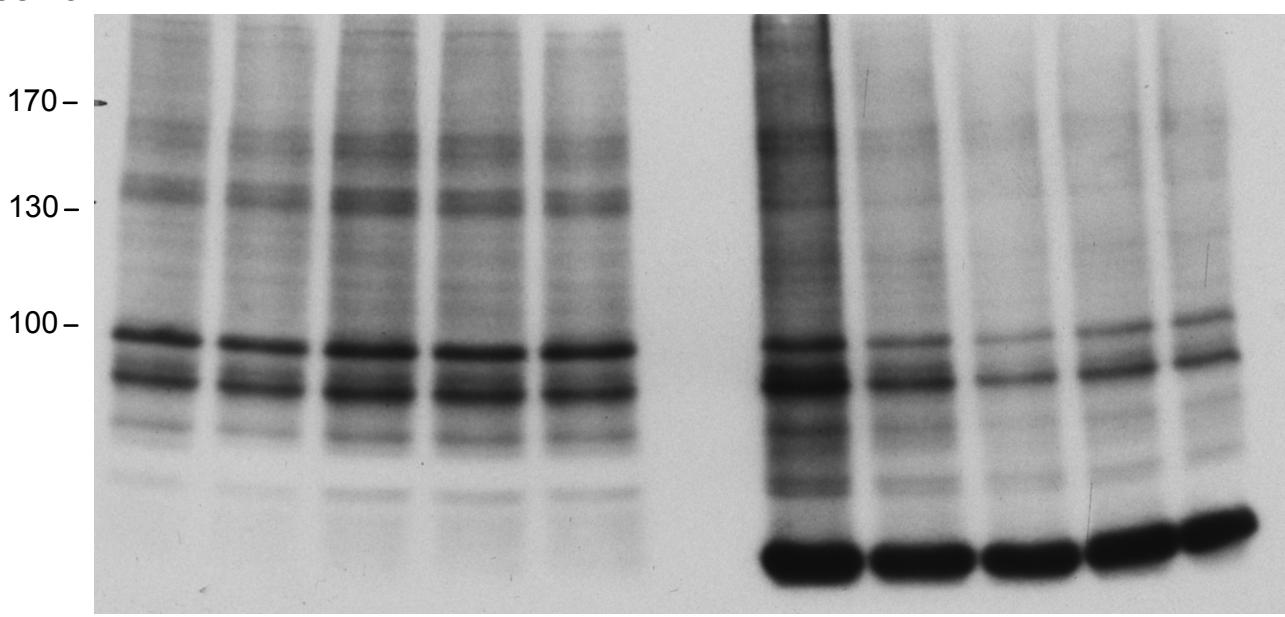
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	-	+	-	-	-	-	+	-	-	-
Nacc1-WT	-	+	-	-	-	-	+	-	-	-
Nacc1-K167R	-	-	+	-	-	-	-	+	-	-
Nacc1-K485R	-	-	-	+	-	-	-	-	+	-
Nacc1-2KR	-	-	-	-	+	-	-	-	-	+
eGFP	+	-	-	-	-	+	-	-	-	-
HA-SUMO1	+	+	+	+	+	+	+	+	+	+



WB: HA

B

	Input					IP: HA				
	-	+	-	-	-	-	+	-	-	-
Nacc1-WT	-	+	-	-	-	-	+	-	-	-
Nacc1-K167R	-	-	+	-	-	-	-	+	-	-
Nacc1-K485R	-	-	-	+	-	-	-	-	+	-
Nacc1-2KR	-	-	-	-	+	-	-	-	-	+
eGFP	+	-	-	-	-	-	+	-	-	-
HA-SUMO2	+	+	+	+	+	+	+	+	+	+



WB: HA