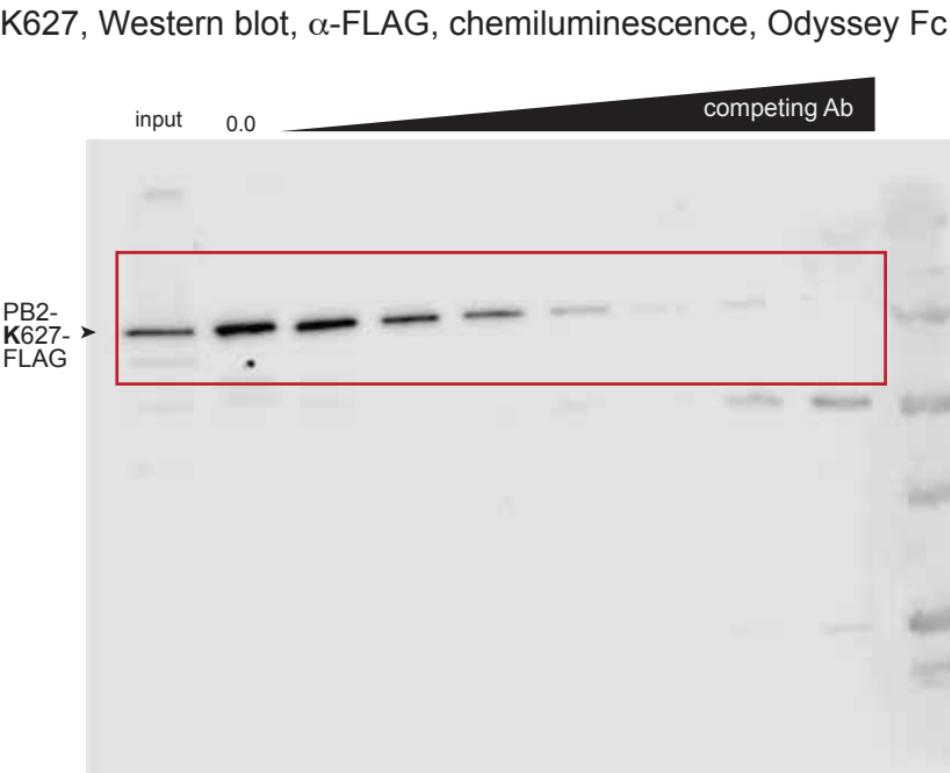
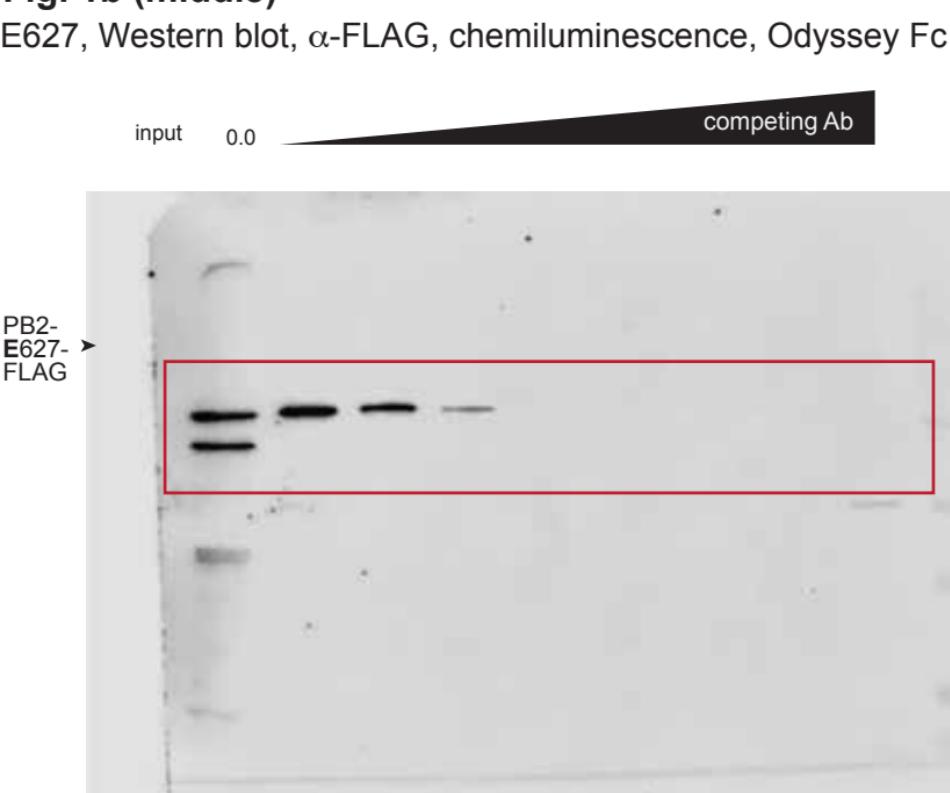
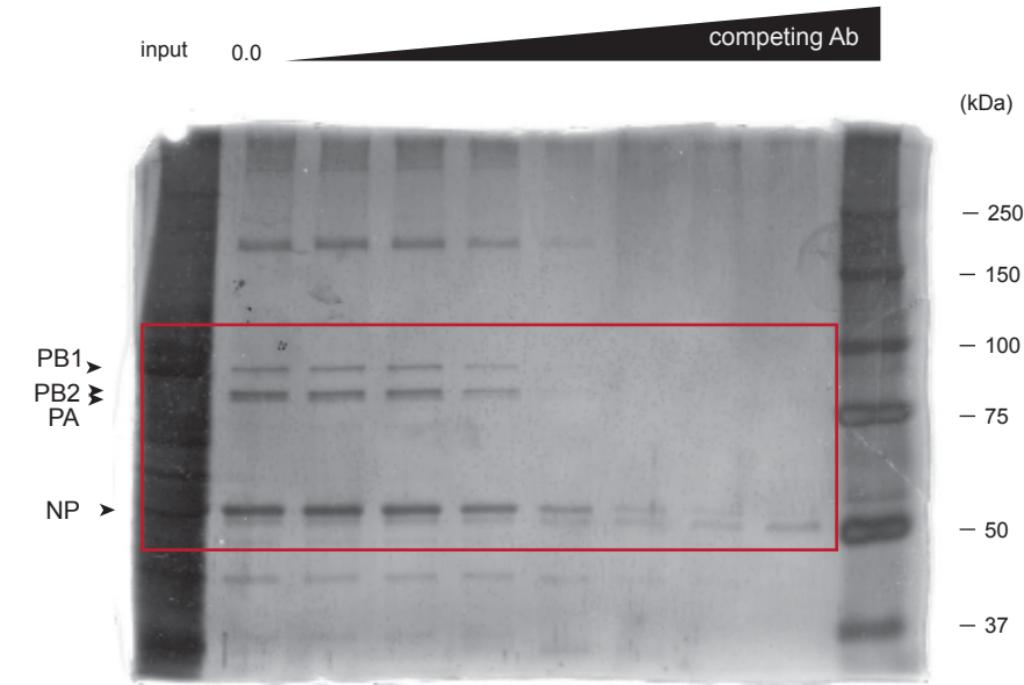
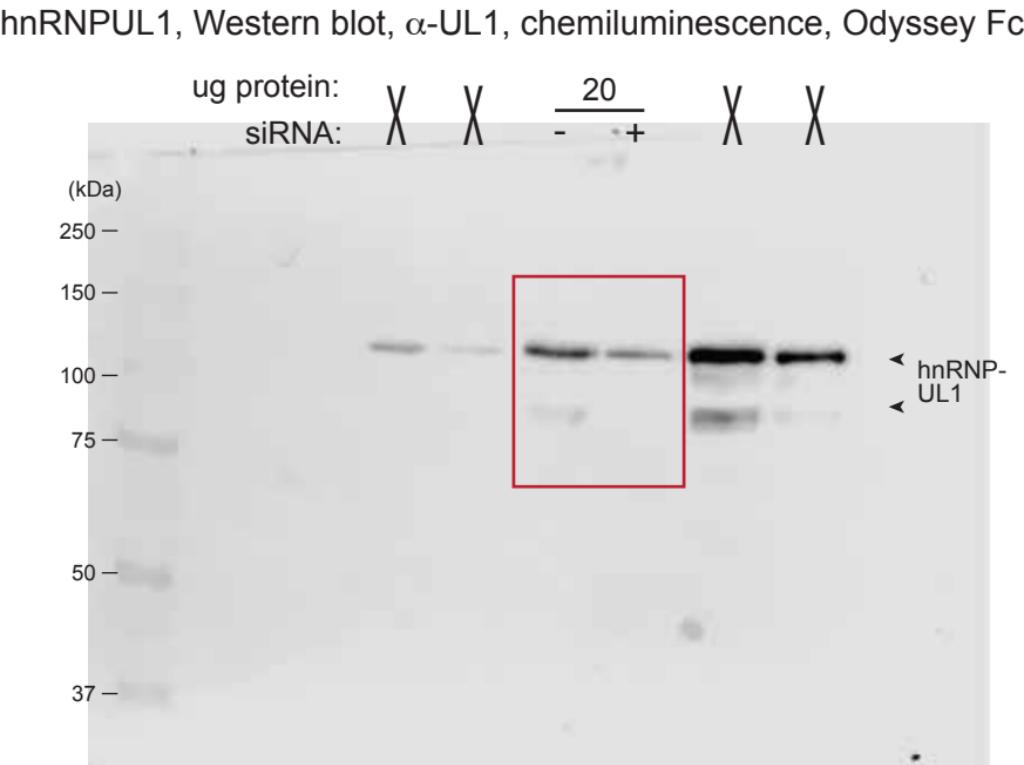


**Supporting Information Raw Images: Uncropped blots for Figures 1B, 2C, 3ACD, 4DE, 5BDE, 6BCF, and Supplementary Figure S5BDF.** Areas of interest used in figures are outlined with a red box. Experimental approach, antibody (where relevant), detection strategy and equipment are indicated for each image. Sizes are shown corresponding to molecular weight markers for proteins or 100 bp ladders for PCR products. Lanes not used in the figure are marked with "X".

**Fig. 1b (top)****Fig. 1b (middle)****Fig. 1b (bottom)**

K627, SDS-PAGE, silver stain, PC photo scanner



**Fig. 2c (left)****Fig. 2c (right)**MECR, Western blot,  $\alpha$ -MECR, chemiluminescence, Odyssey Fc

ug protein:

siRNA:

X    X

-    +

X    X

(kDa)

150 —

100 —

75 —

50 —

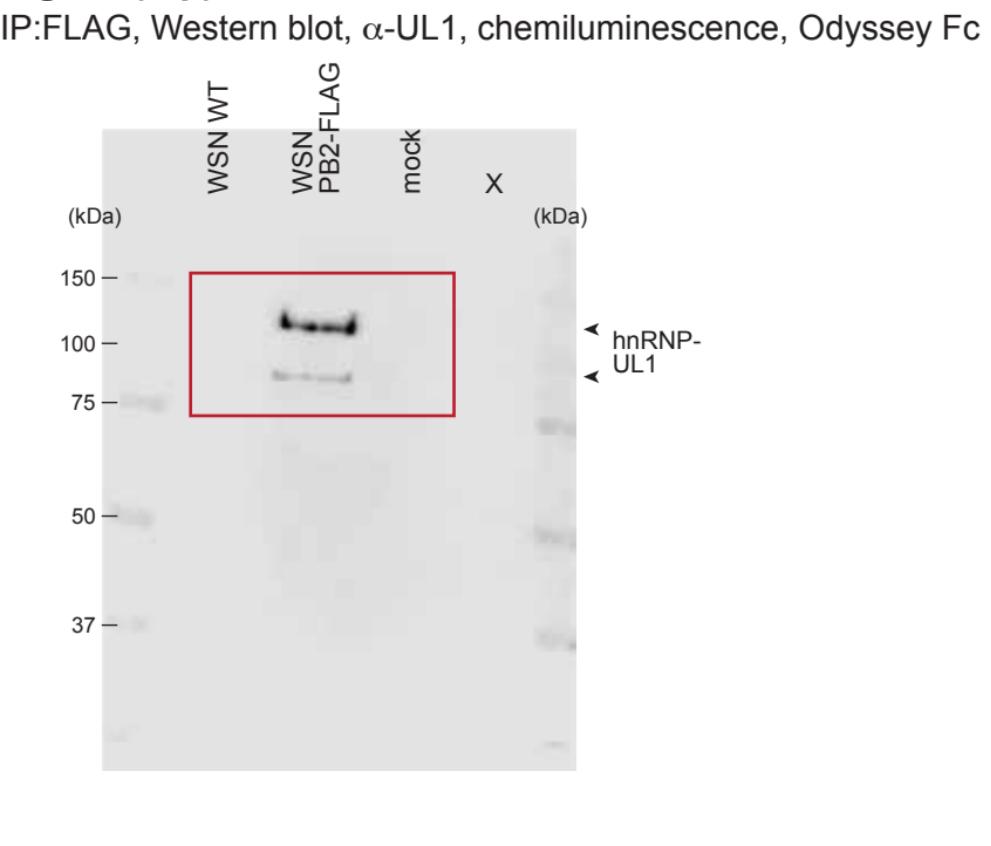
37 —

25 —

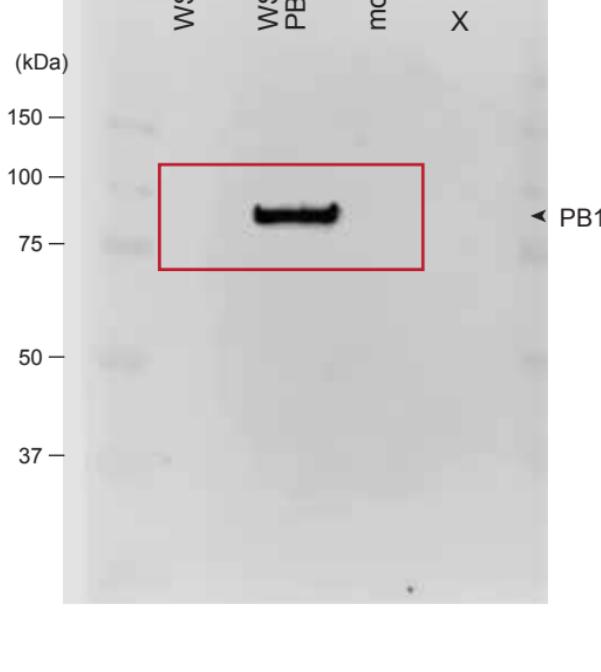
15 —



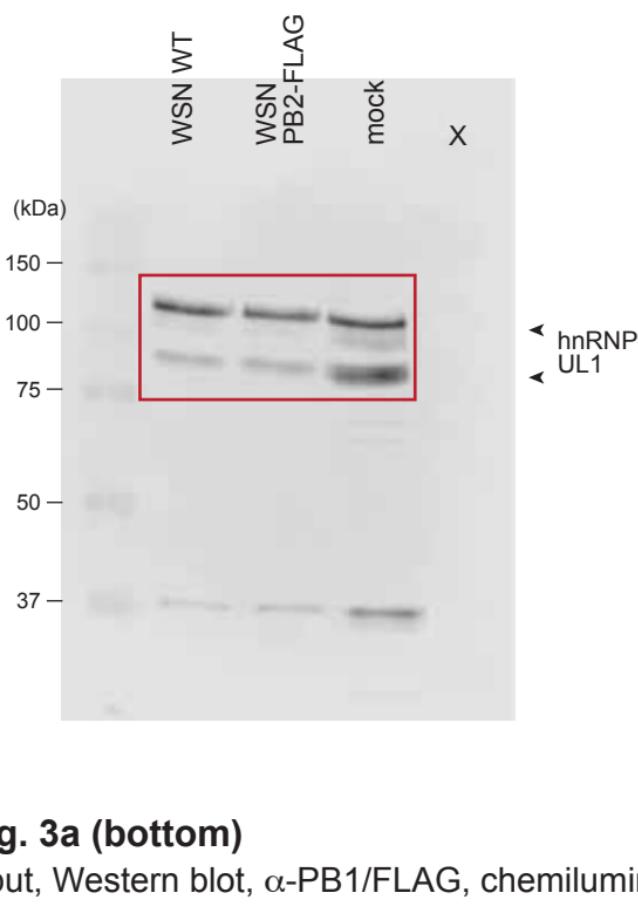
\* MECR

**Fig. 3a (top)****Fig. 3a (top)**

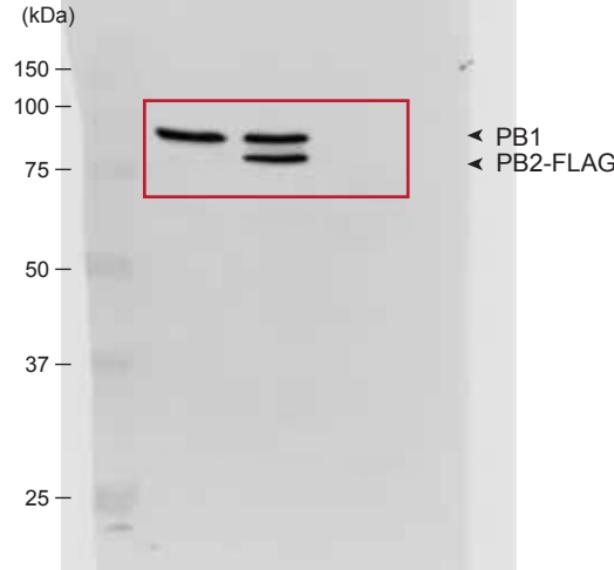
IP:FLAG, Western blot,  $\alpha$ -PB1, chemiluminescence, Odyssey Fc

**Fig. 3a (bottom)**

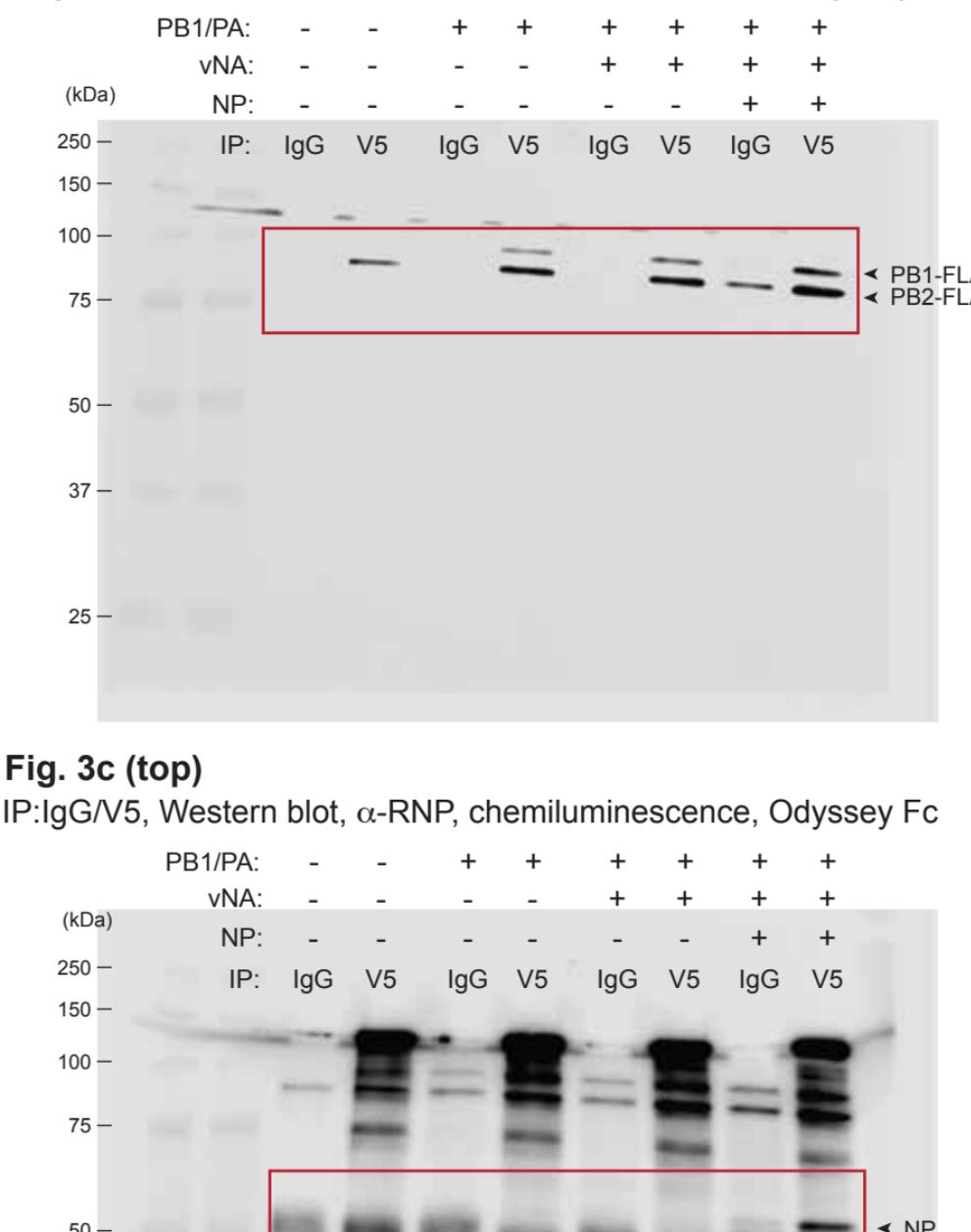
input, Western blot,  $\alpha$ -UL1, chemiluminescence, Odyssey Fc

**Fig. 3a (bottom)**

input, Western blot,  $\alpha$ -PB1/FLAG, chemiluminescence, Odyssey Fc

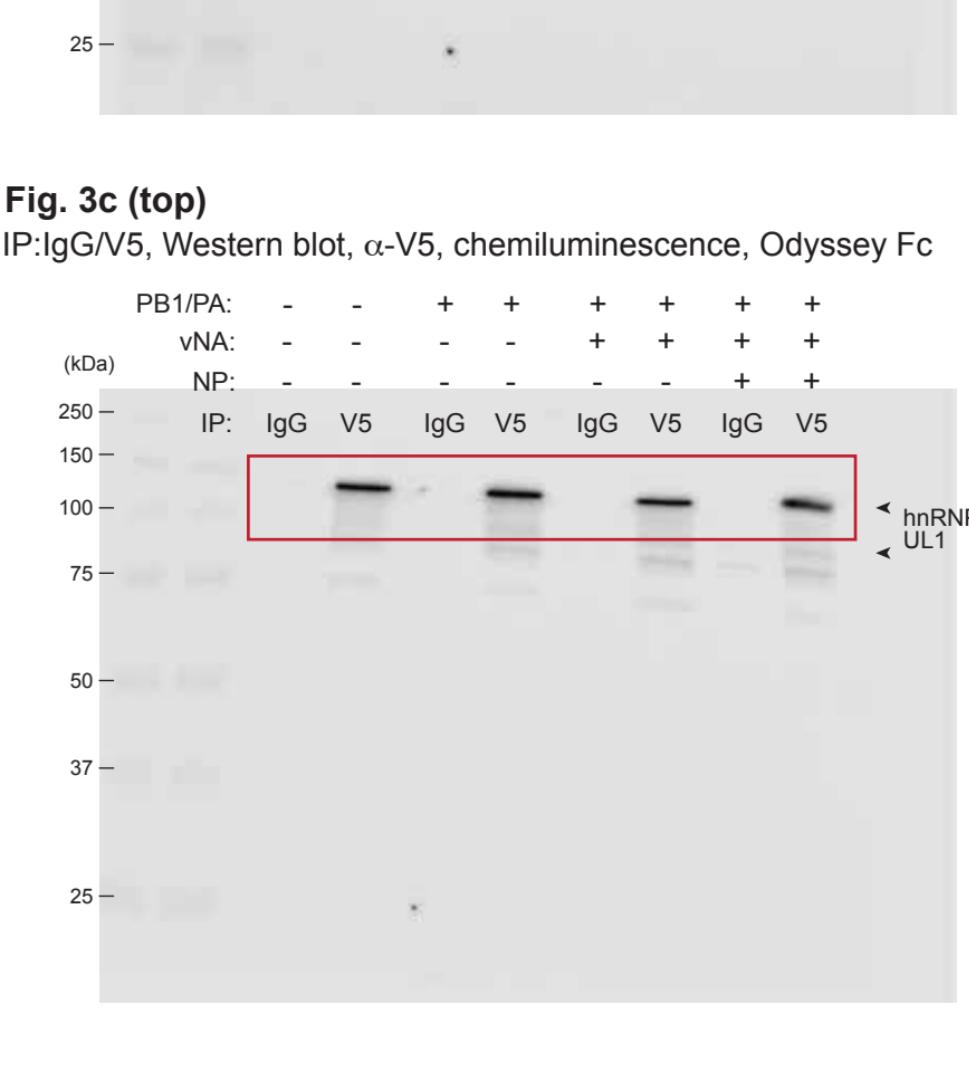


### **Fig. 3c (top)**



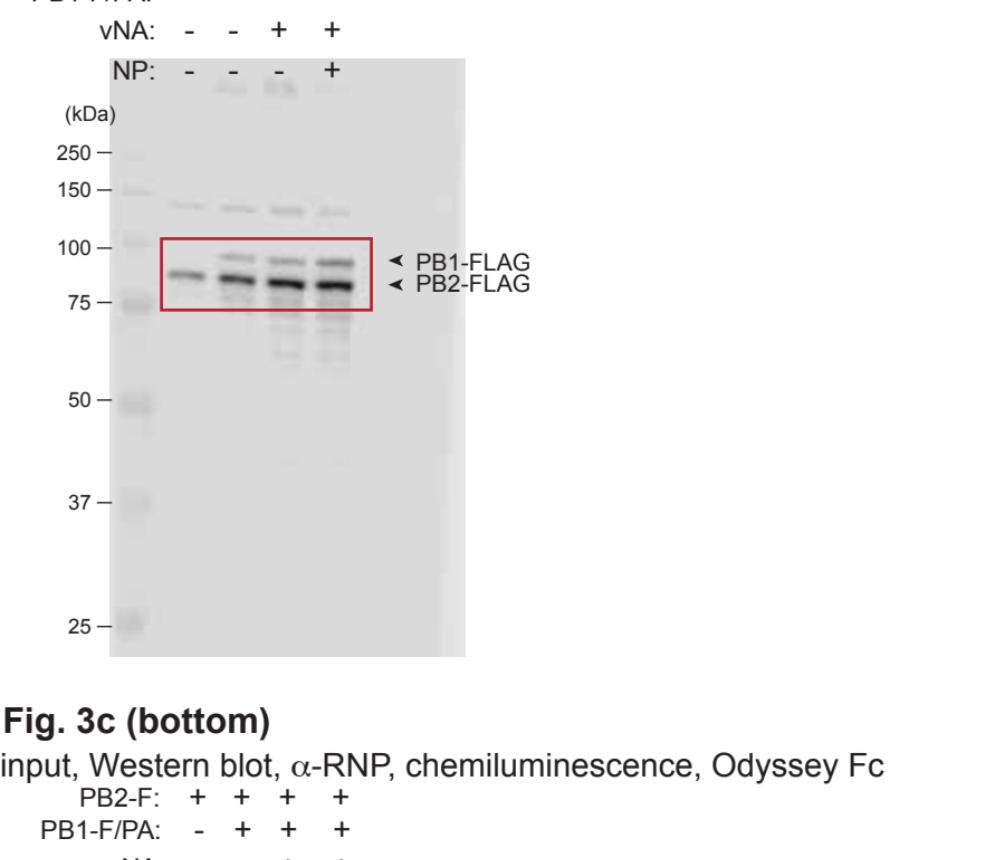
### **Fig. 3c (top)**

IP:IgG/V5, Western blot,  $\alpha$ -RNP, chemiluminescence, Odyssey Fc



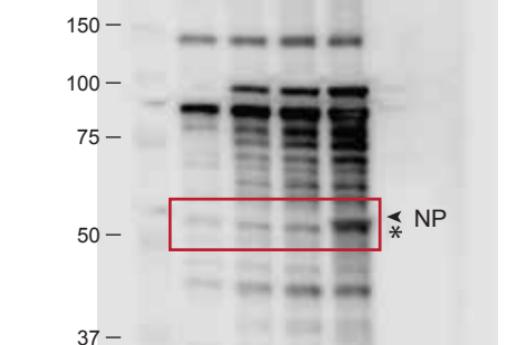
### **Fig. 3c (top)**

IP:IgG/V5, Western blot,  $\alpha$ -V5, chemiluminescence, Odyssey Fc



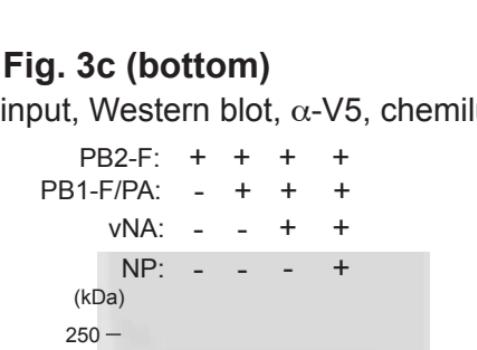
### **Fig. 3c (bottom)**

input, Western blot,  $\alpha$ -FLAG, chemiluminescence, Odyssey Fc



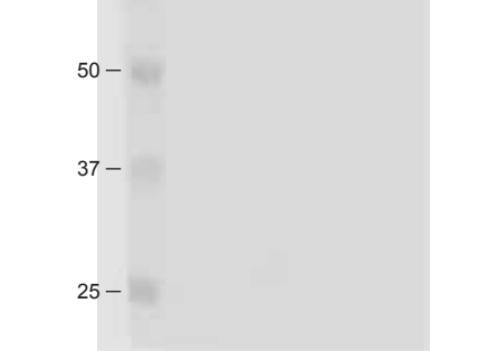
### **Fig. 3c (bottom)**

input, Western blot,  $\alpha$ -RNP, chemiluminescence, Odyssey Fc

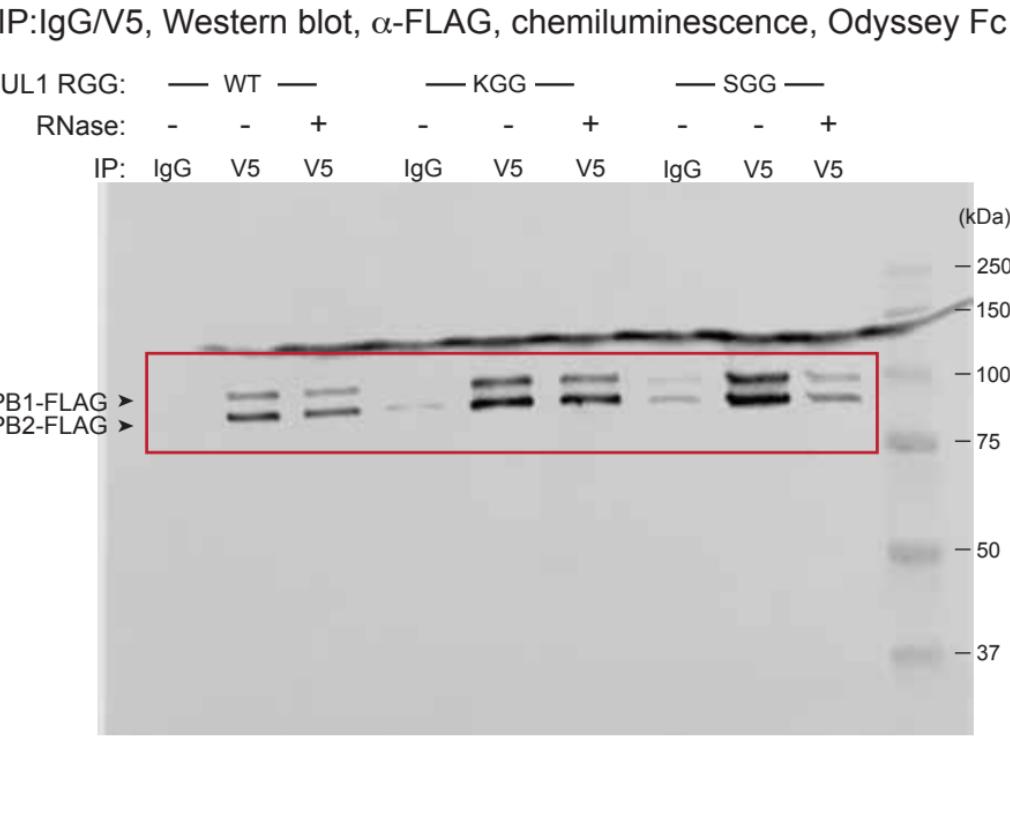


### **Fig. 3c (bottom)**

input, Western blot,  $\alpha$ -V5, chemiluminescence, Odyssey Fc

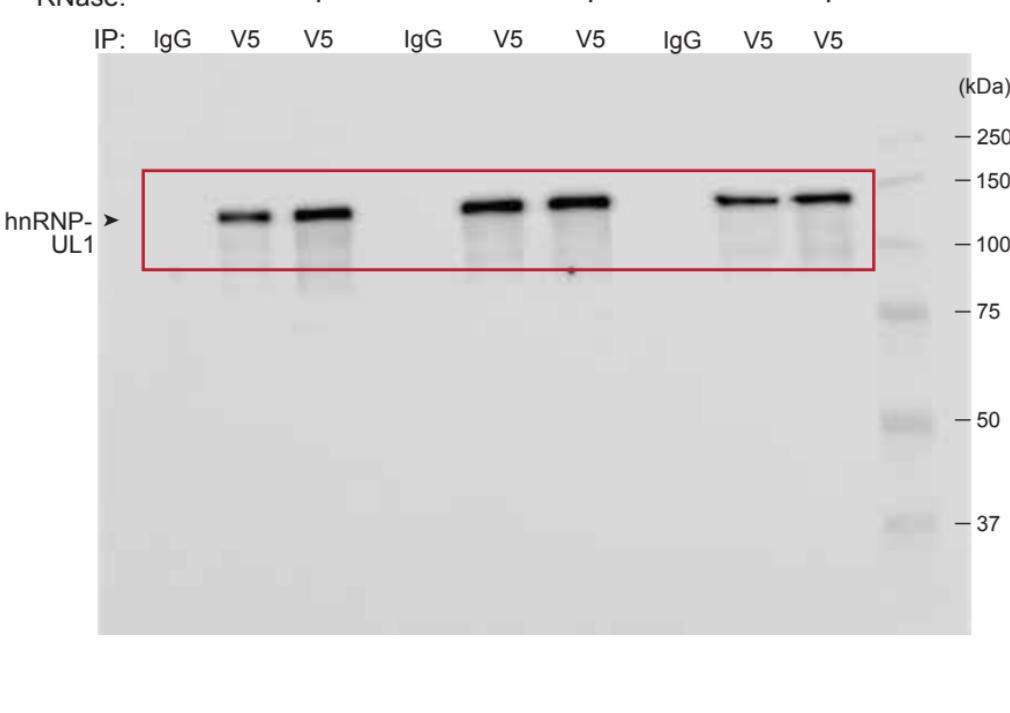


### Fig. 3d (top)



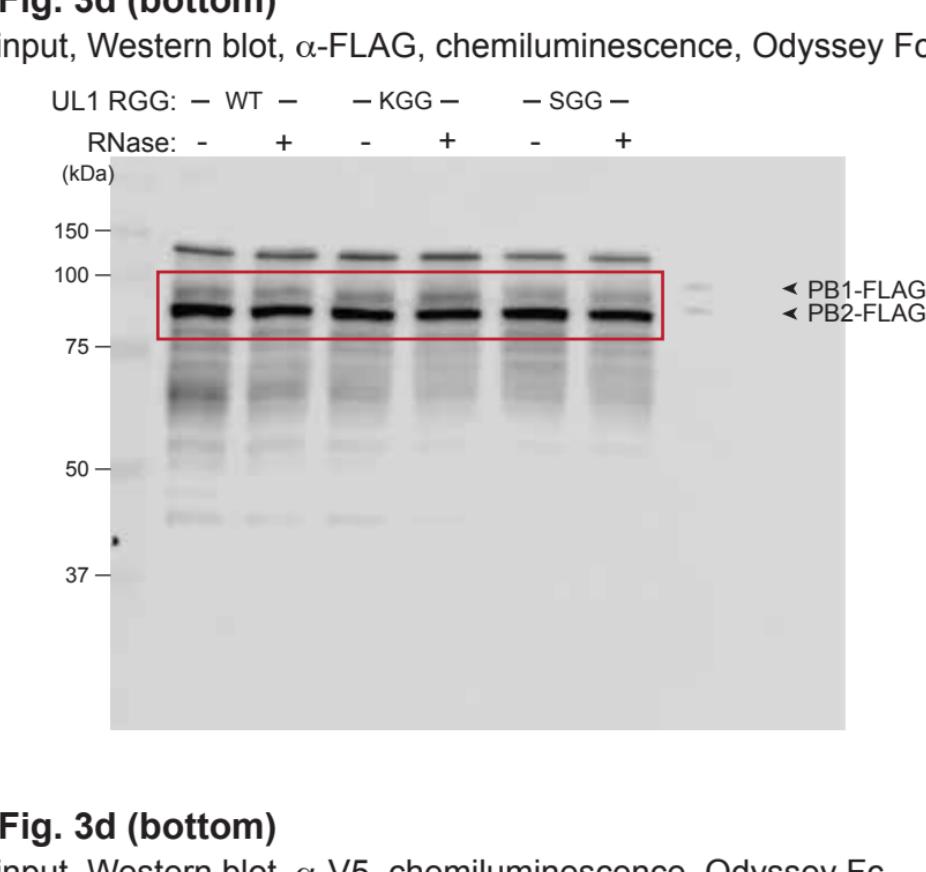
### Fig. 3d (top)

IP: IgG/V5, Western blot,  $\alpha$ -V5, chemiluminescence, Odyssey Fc



### Fig. 3d (bottom)

input, Western blot,  $\alpha$ -FLAG, chemiluminescence, Odyssey Fc



### Fig. 3d (bottom)

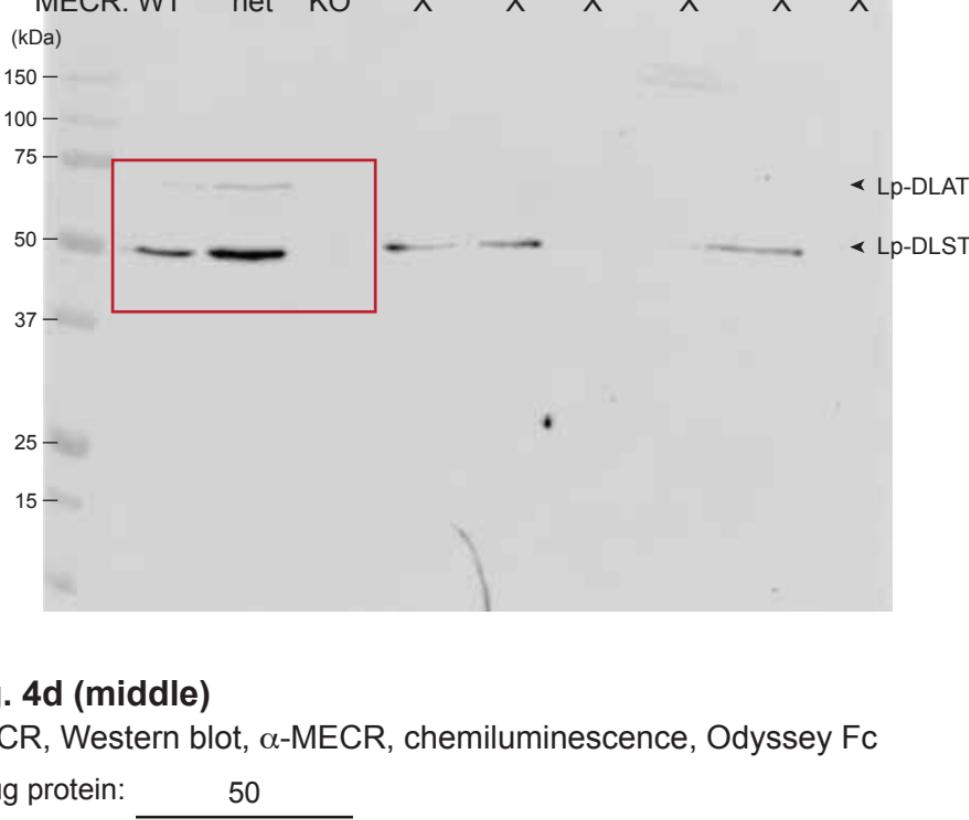
input, Western blot,  $\alpha$ -V5, chemiluminescence, Odyssey Fc



### **Fig. 4d (top)**

Lipoic acid, Western blot,  $\alpha$ -LA, chemiluminescence, Odyssey Fc

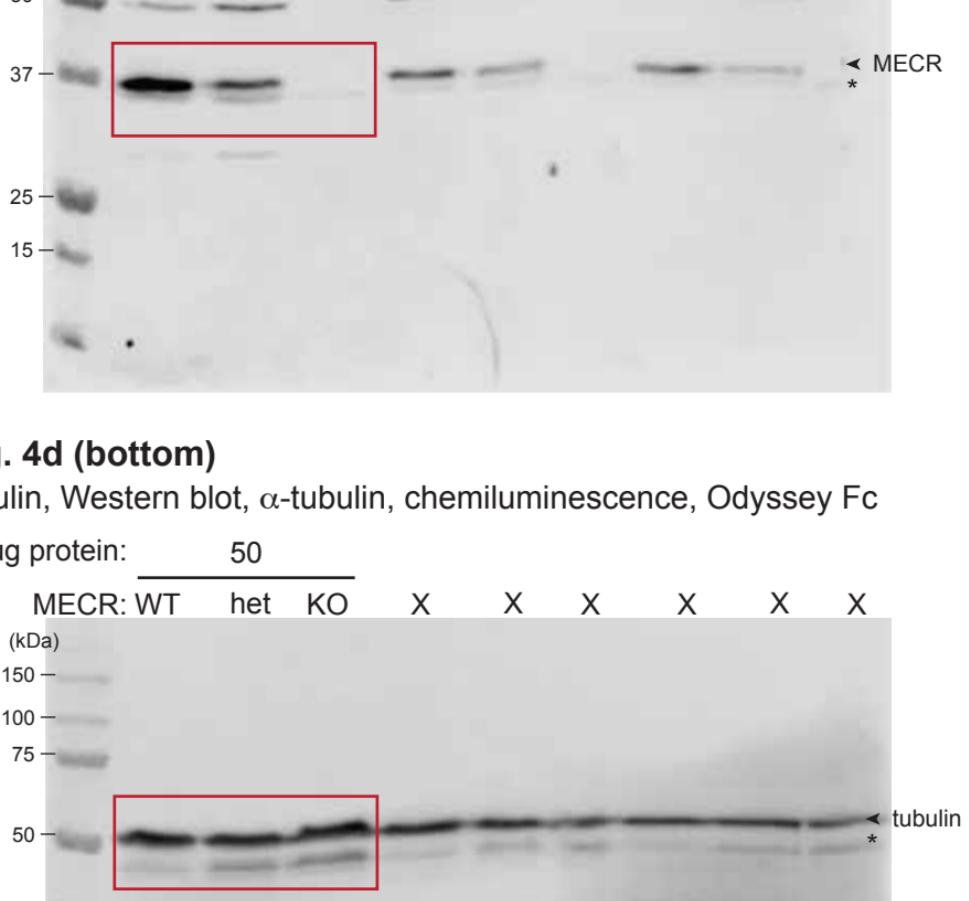
ug protein: 50



### **Fig. 4d (middle)**

MECR, Western blot,  $\alpha$ -MECR, chemiluminescence, Odyssey Fc

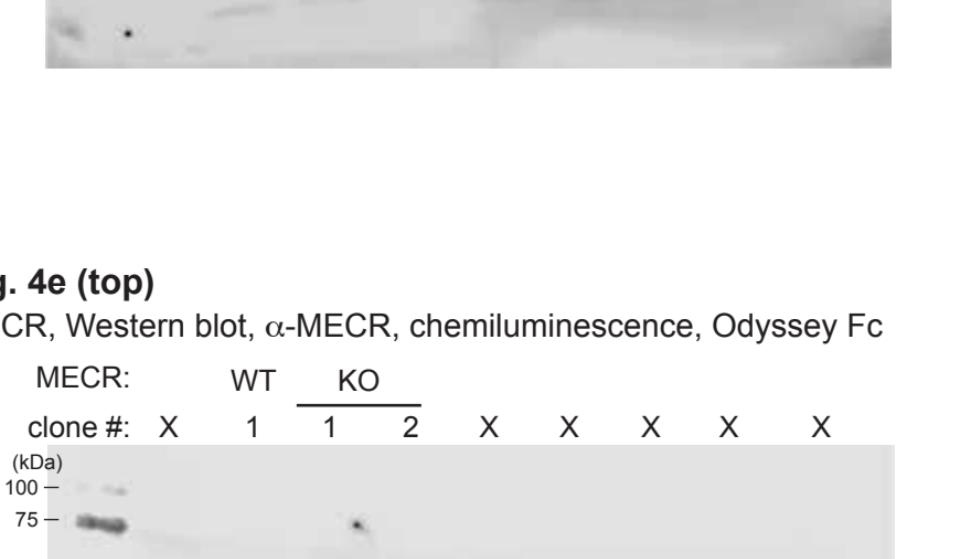
ug protein: 50



### **Fig. 4d (bottom)**

tubulin, Western blot,  $\alpha$ -tubulin, chemiluminescence, Odyssey Fc

ug protein: 50

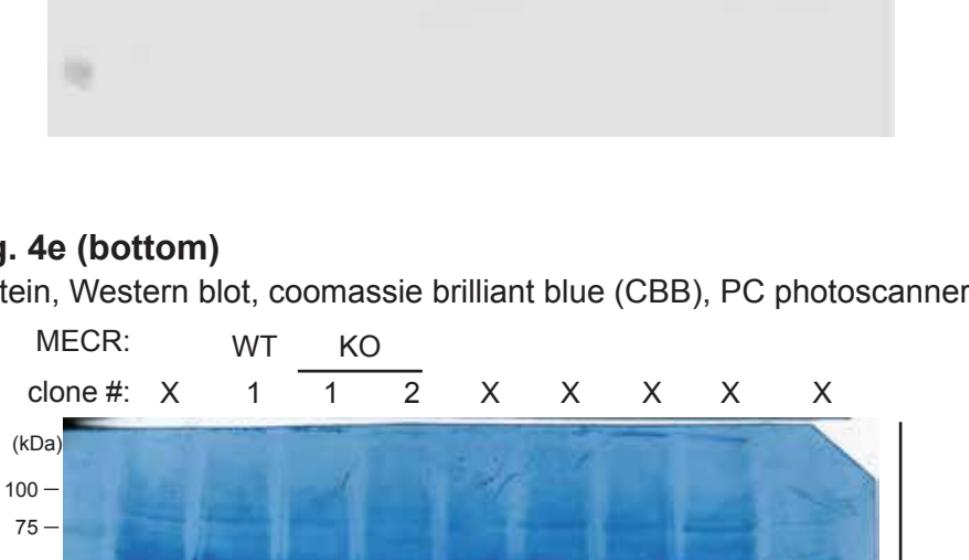


### **Fig. 4e (top)**

MECR, Western blot,  $\alpha$ -MECR, chemiluminescence, Odyssey Fc

MECR:    WT    KO

clone #: X    1    1    2    X    X    X    X    X



### **Fig. 4e (bottom)**

protein, Western blot, coomassie brilliant blue (CBB), PC photoscanner

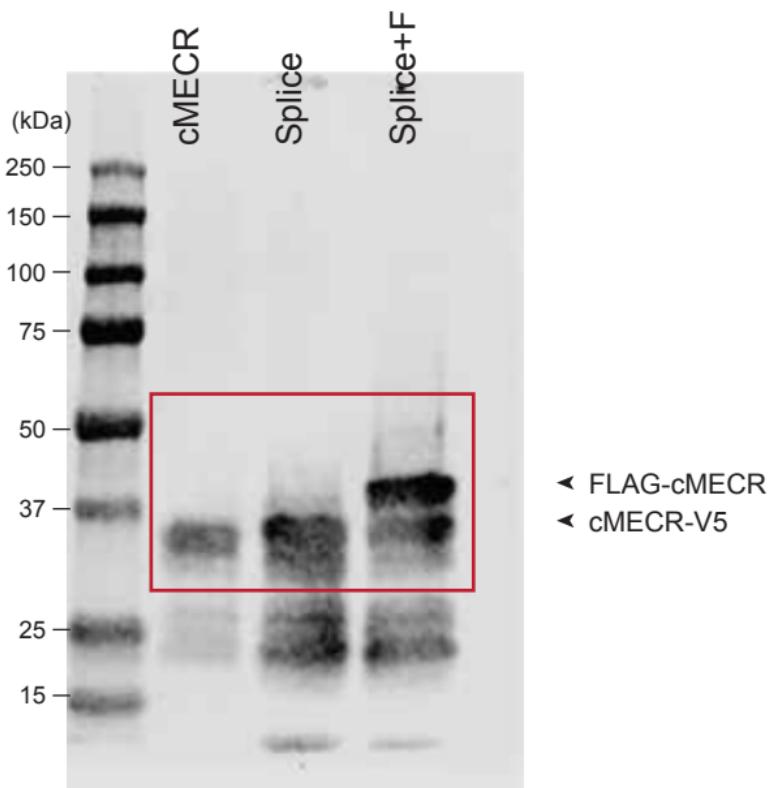
MECR:    WT    KO

clone #: X    1    1    2    X    X    X    X    X



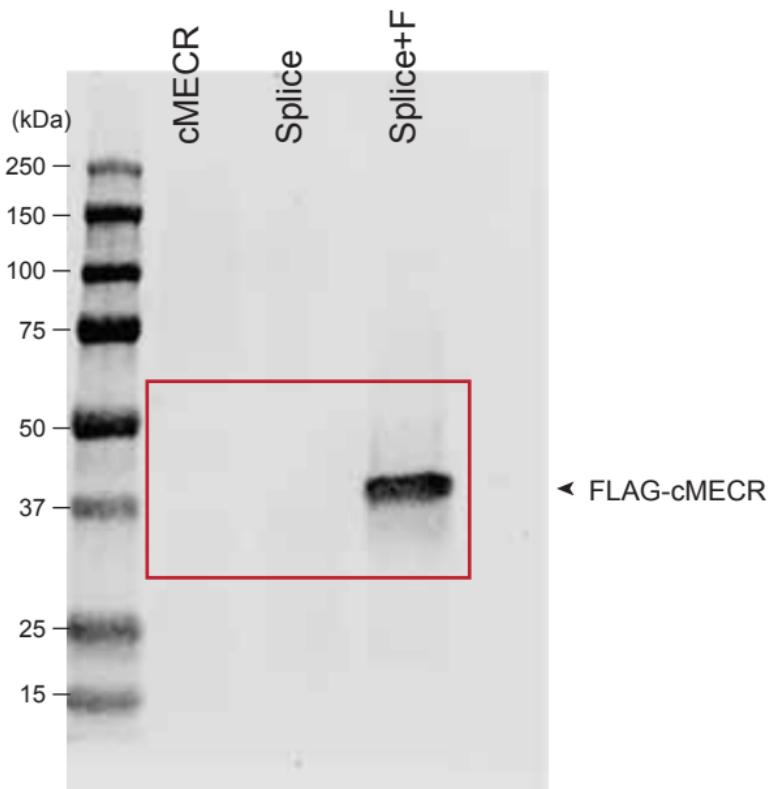
**Fig. 5b (left)**

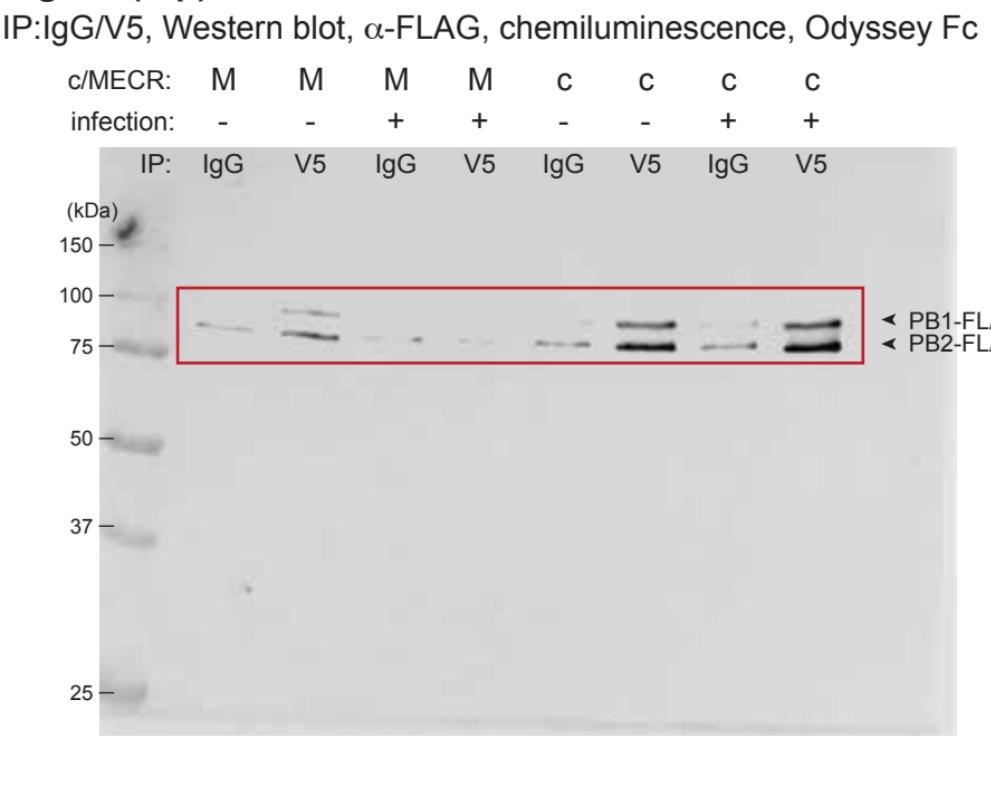
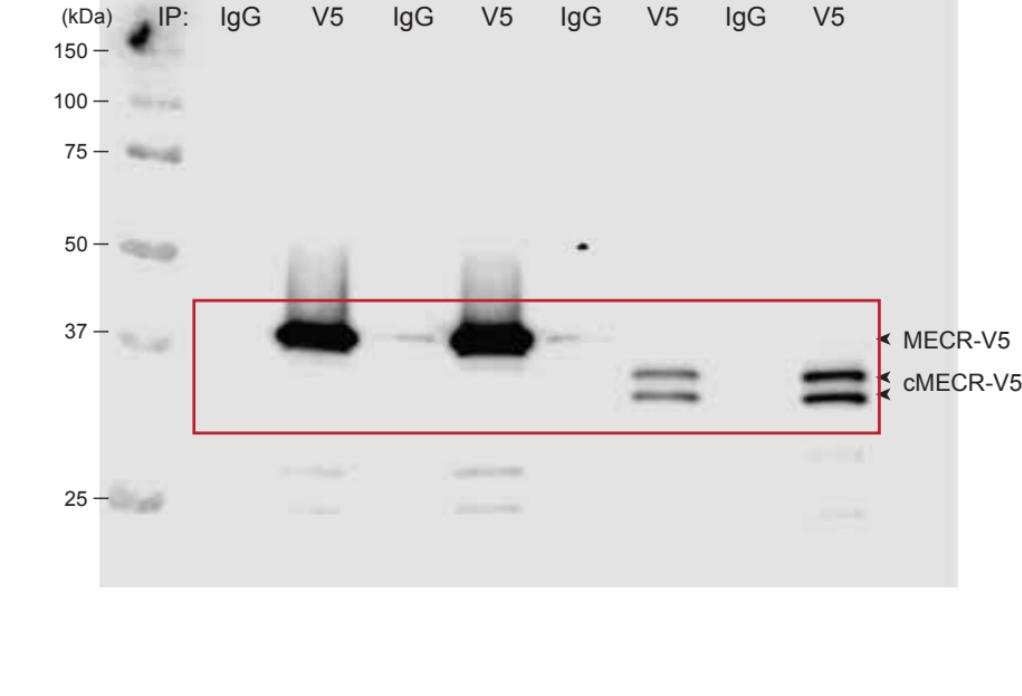
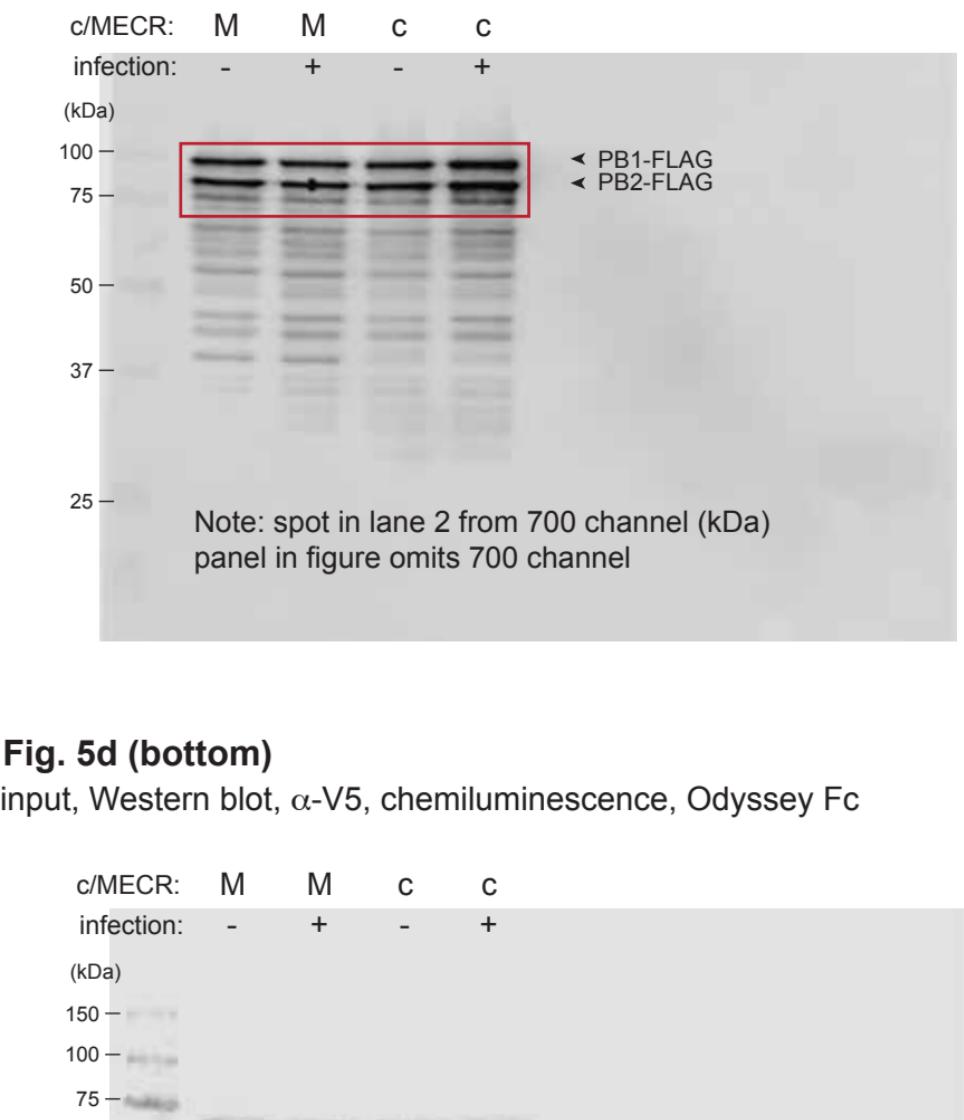
cMECR-V5, Western blot,  $\alpha$ -V5, NIR-800, Odyssey Fc

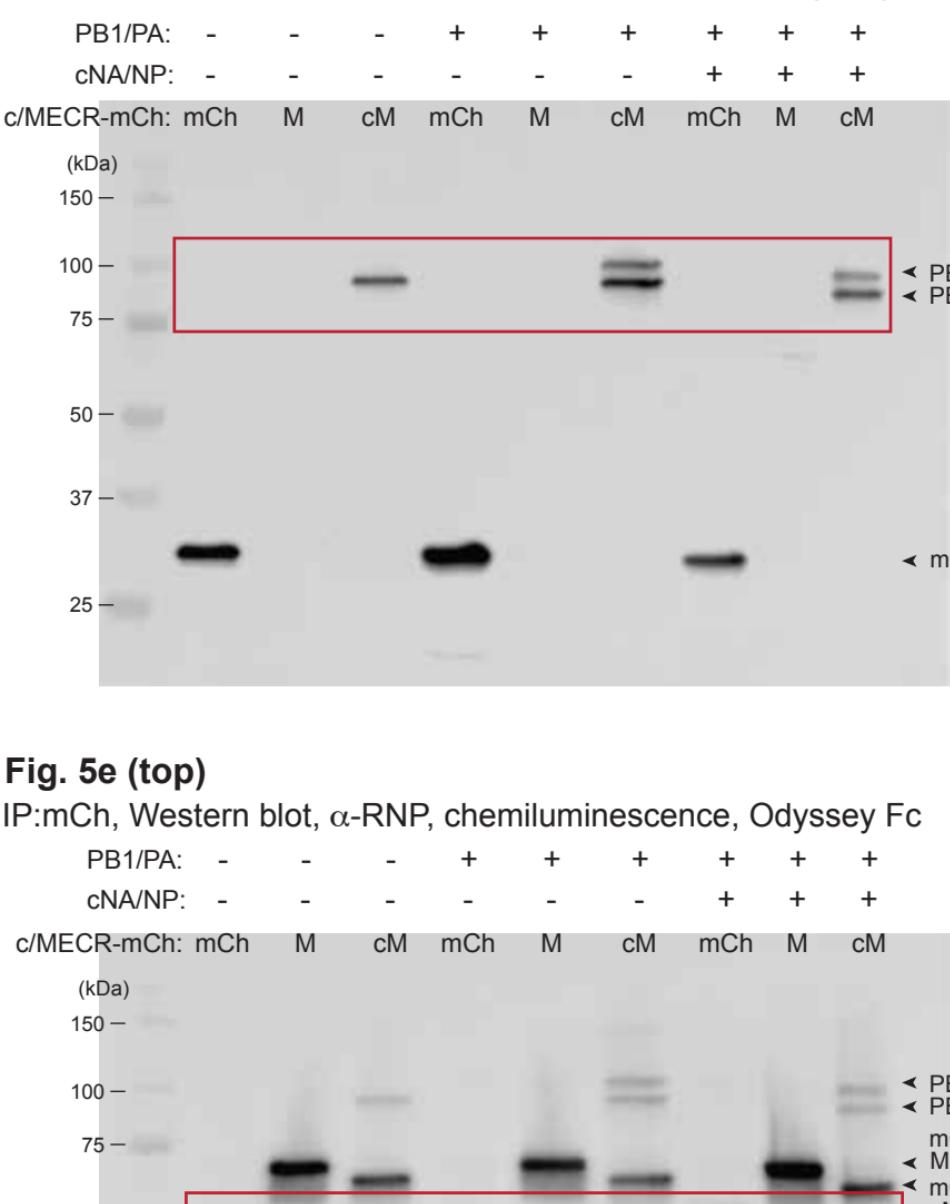
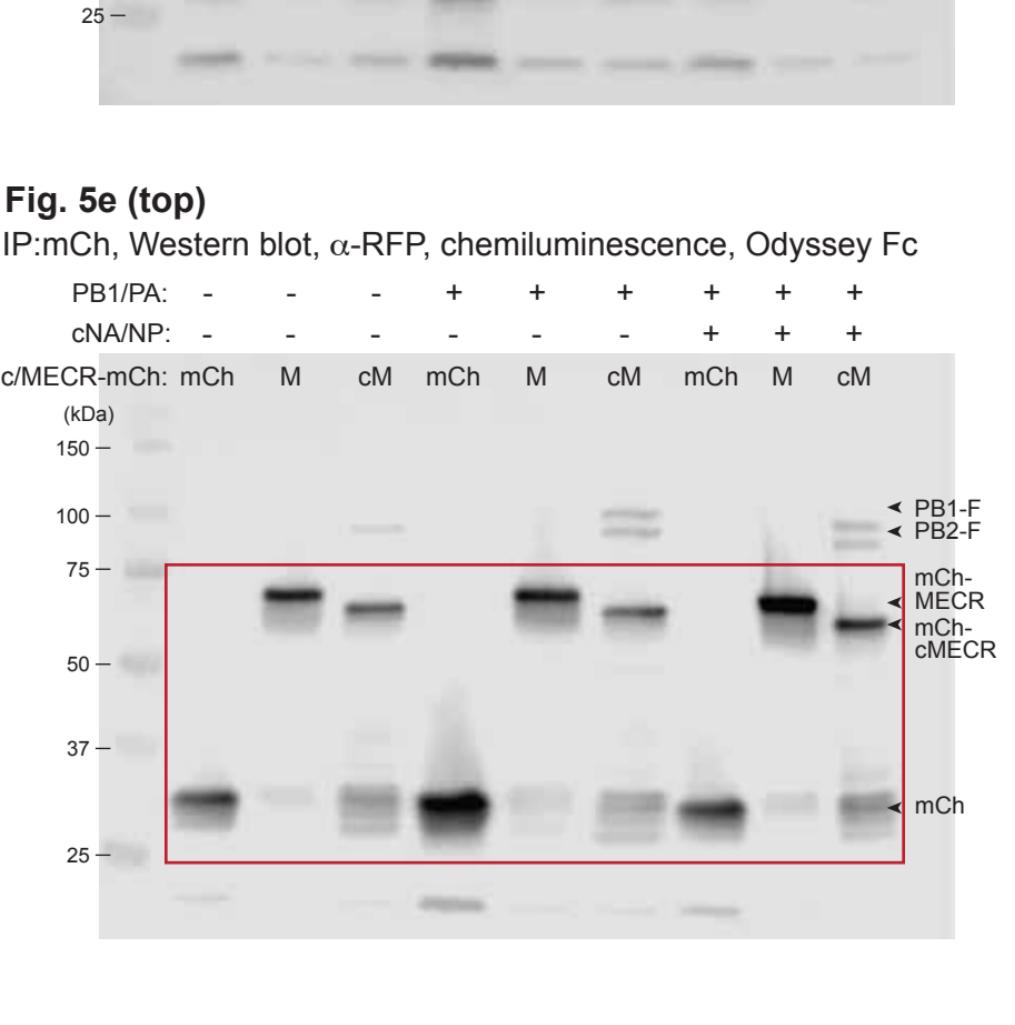
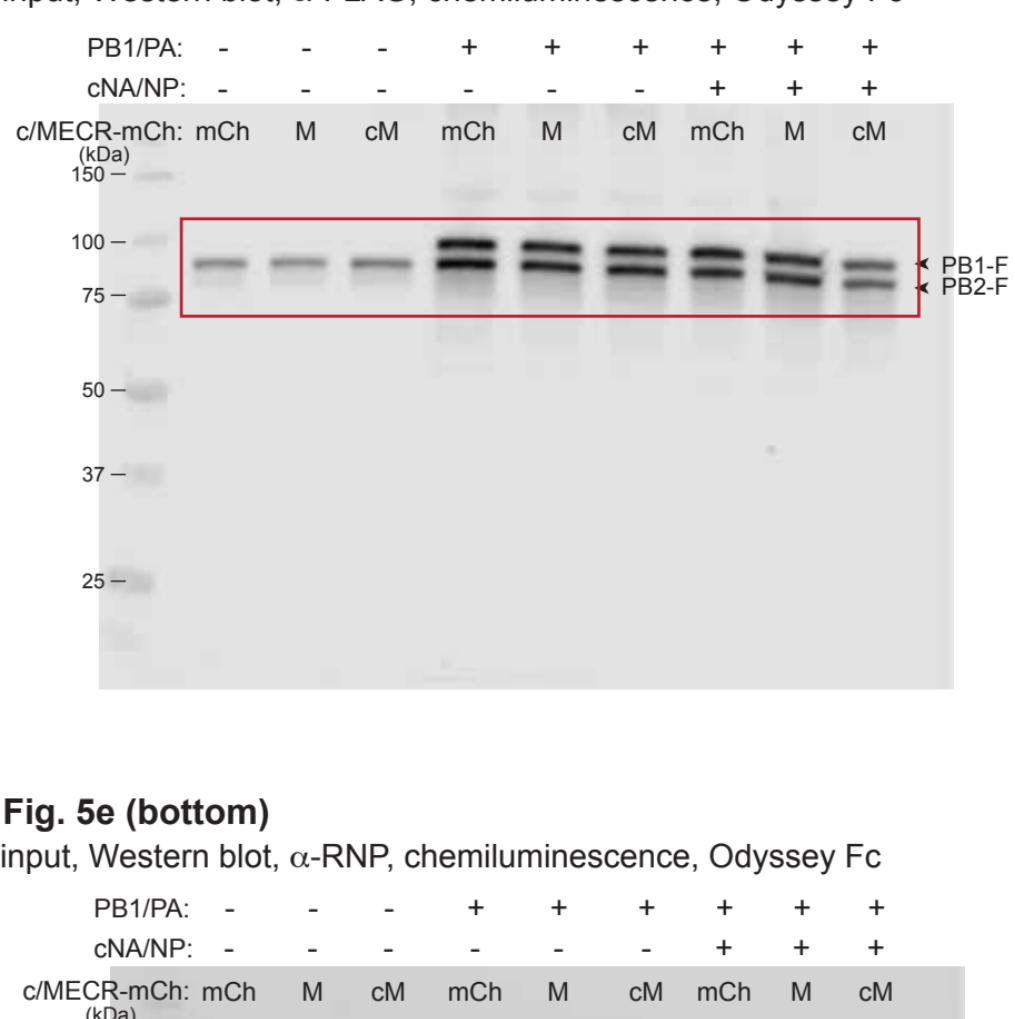
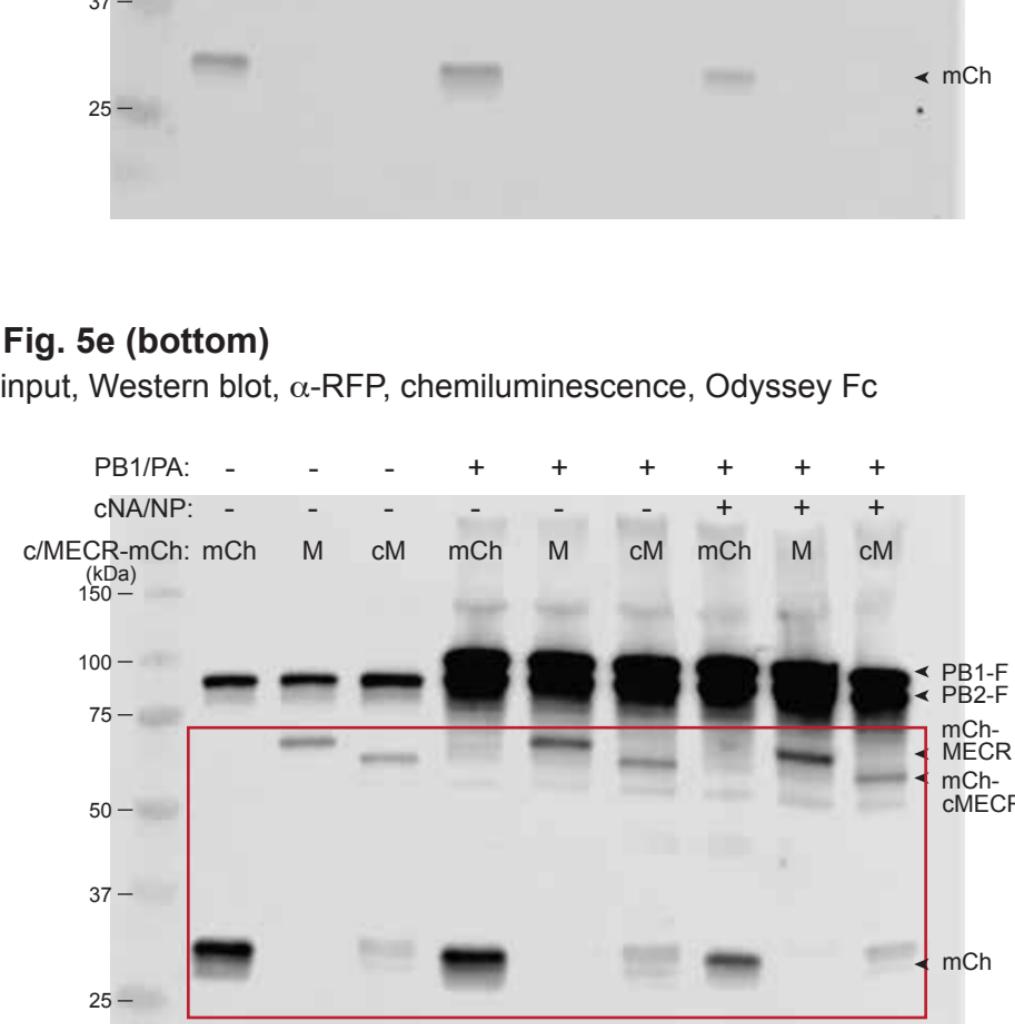


**Fig. 5b (right)**

cMECR-splice, Western blot,  $\alpha$ -FLAG, NIR-700, Odyssey Fc



**Fig. 5d (top)****Fig. 5d (top)**IP:IgG/V5, Western blot,  $\alpha$ -V5, chemiluminescence, Odyssey Fc**Fig. 5d (bottom)**input, Western blot,  $\alpha$ -FLAG, chemiluminescence, Odyssey Fc**Fig. 5d (bottom)**input, Western blot,  $\alpha$ -V5, chemiluminescence, Odyssey Fc

**Fig. 5e (top)****Fig. 5e (top)**IP:mCh, Western blot,  $\alpha$ -RNP, chemiluminescence, Odyssey Fc**Fig. 5e (top)**IP:mCh, Western blot,  $\alpha$ -RFP, chemiluminescence, Odyssey Fc**Fig. 5e (bottom)**input, Western blot,  $\alpha$ -FLAG, chemiluminescence, Odyssey Fc**Fig. 5e (bottom)**input, Western blot,  $\alpha$ -RNP, chemiluminescence, Odyssey Fc

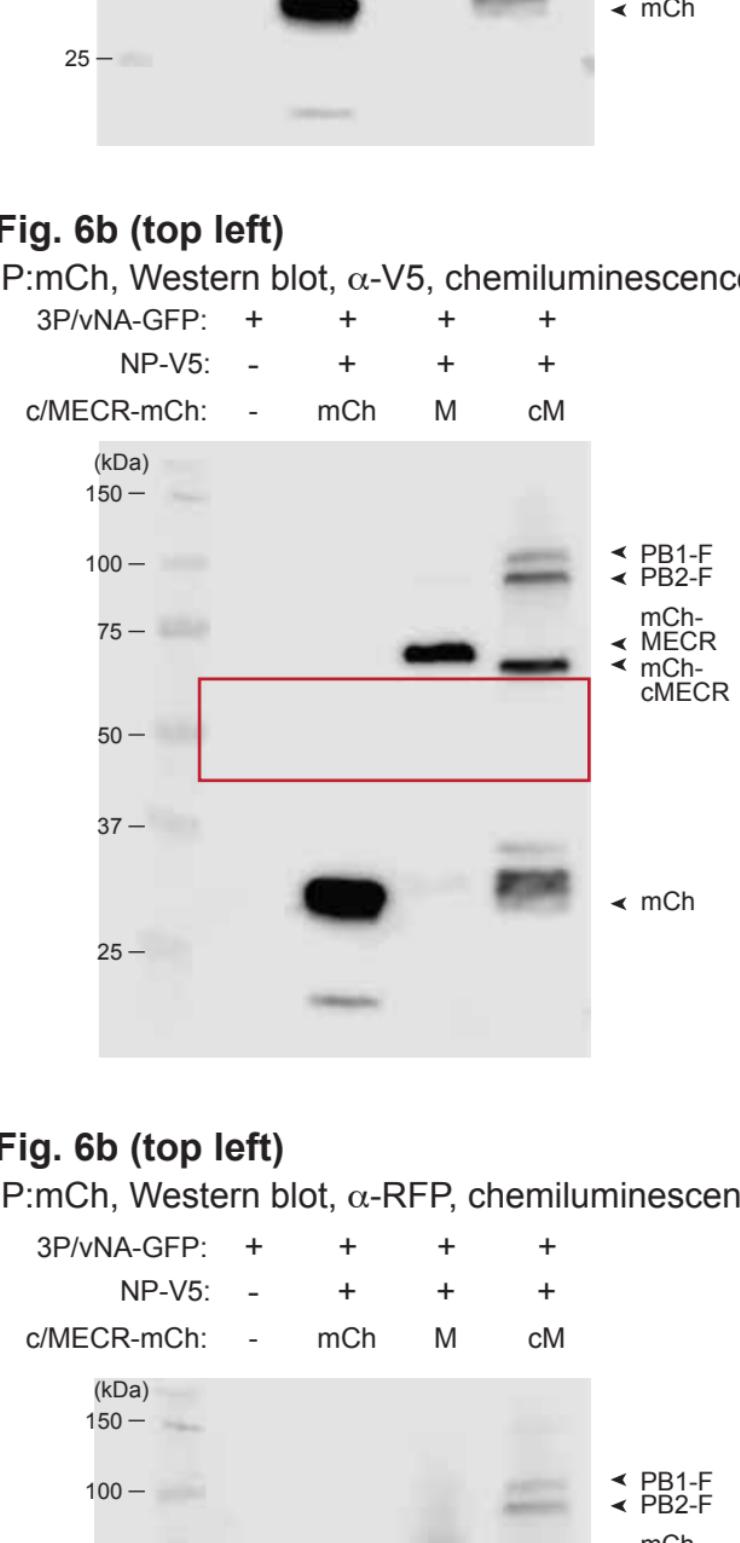
**Fig. 6b (top left)**

IP:mCh, Western blot,  $\alpha$ -FLAG, chemiluminescence, Odyssey Fc

3P/vNA-GFP: + + + +

NP-V5: - + + +

c/MECR-mCh: - mCh M cM



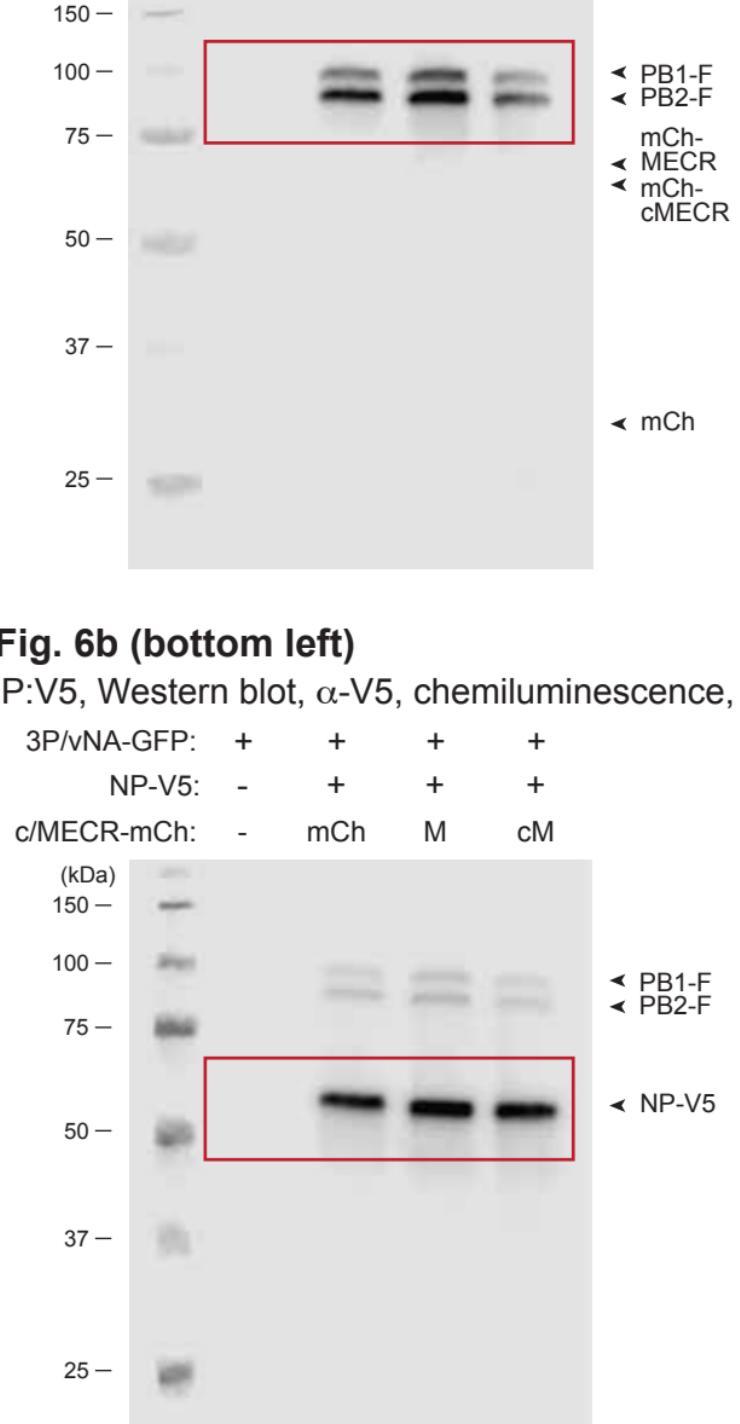
**Fig. 6b (top left)**

IP:mCh, Western blot,  $\alpha$ -V5, chemiluminescence, Odyssey Fc

3P/vNA-GFP: + + + +

NP-V5: - + + +

c/MECR-mCh: - mCh M cM



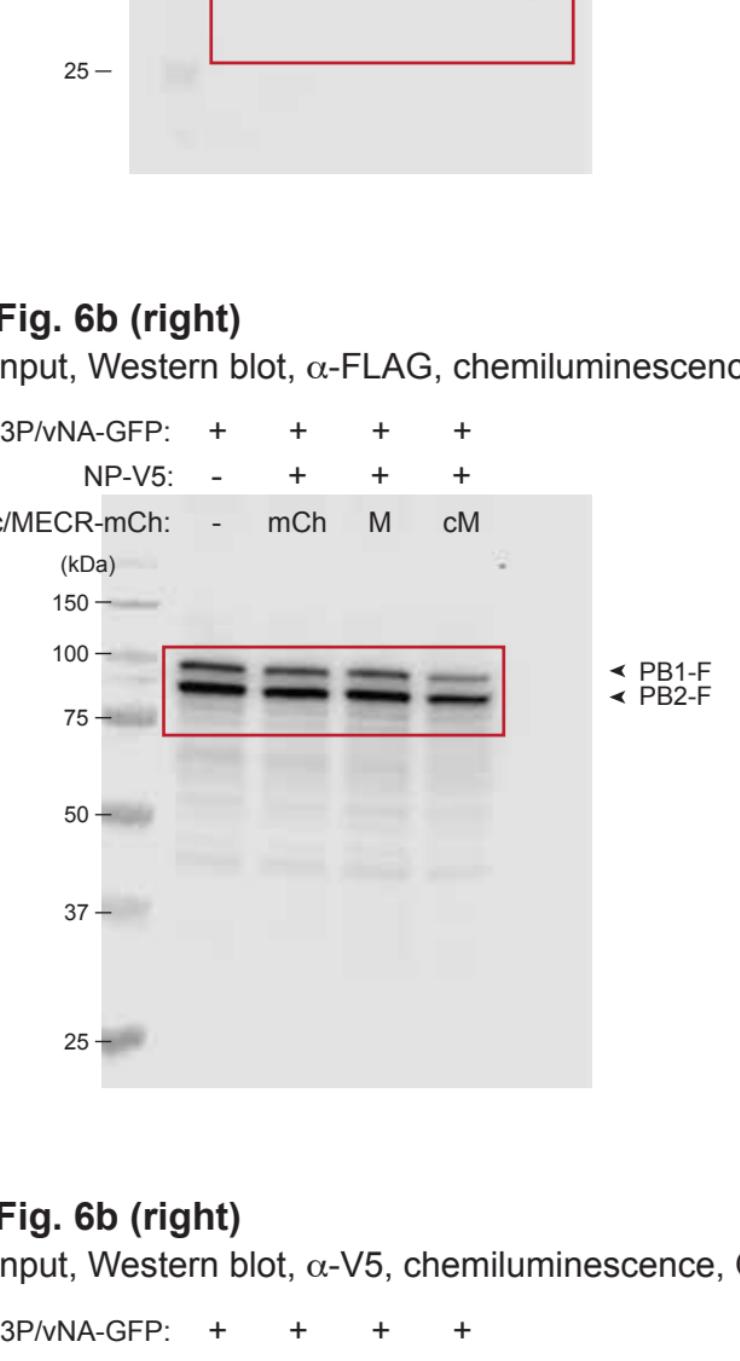
**Fig. 6b (top left)**

IP:mCh, Western blot,  $\alpha$ -RFP, chemiluminescence, Odyssey Fc

3P/vNA-GFP: + + + +

NP-V5: - + + +

c/MECR-mCh: - mCh M cM



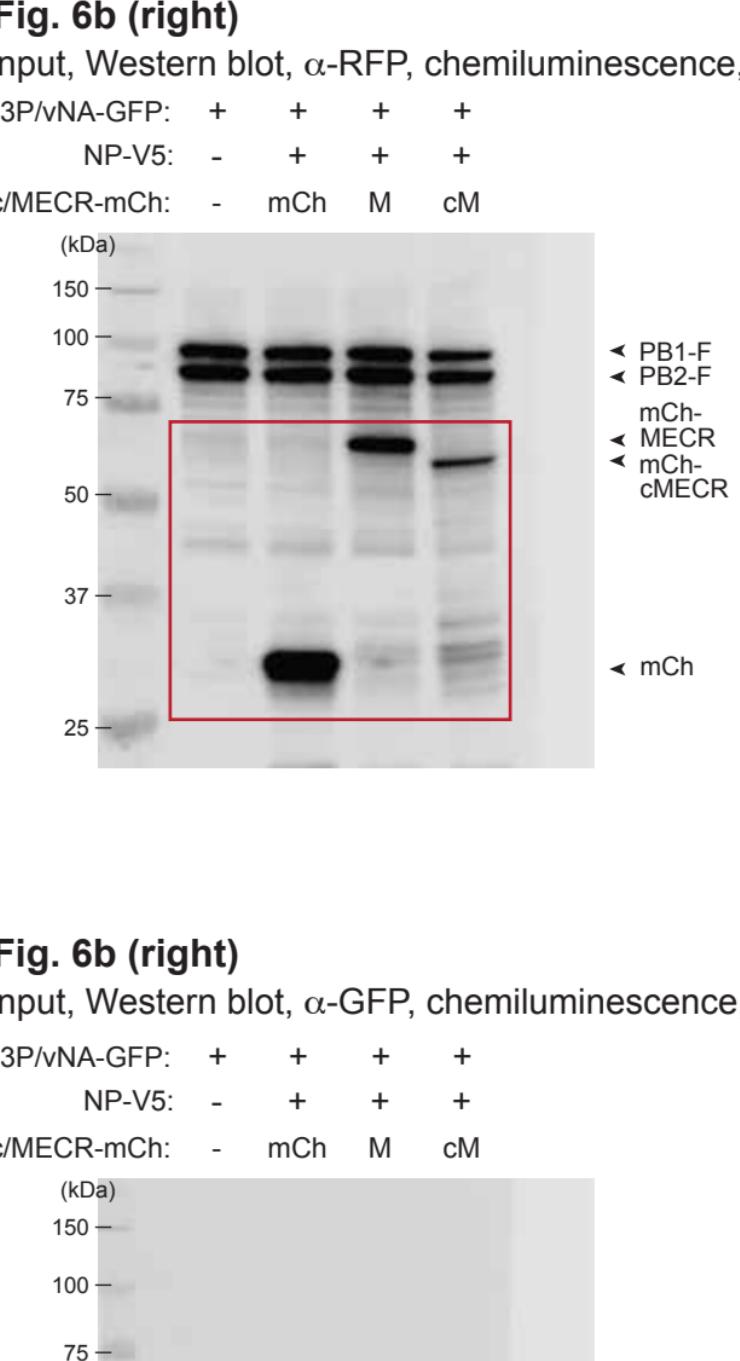
**Fig. 6b (bottom left)**

IP:V5, Western blot,  $\alpha$ -FLAG, chemiluminescence, Odyssey Fc

3P/vNA-GFP: + + + +

NP-V5: - + + +

c/MECR-mCh: - mCh M cM



**Fig. 6b (bottom left)**

IP:V5, Western blot,  $\alpha$ -V5, chemiluminescence, Odyssey Fc

3P/vNA-GFP: + + + +

NP-V5: - + + +

c/MECR-mCh: - mCh M cM



**Fig. 6b (right)**

IP:V5, Western blot,  $\alpha$ -RFP, chemiluminescence, Odyssey Fc

3P/vNA-GFP: + + + +

NP-V5: - + + +

c/MECR-mCh: - mCh M cM



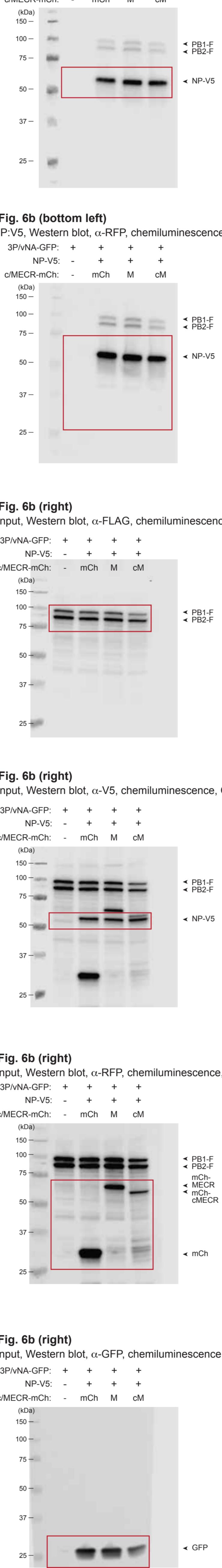
**Fig. 6b (right)**

IP:V5, Western blot,  $\alpha$ -GFP, chemiluminescence, Odyssey Fc

3P/vNA-GFP: + + + +

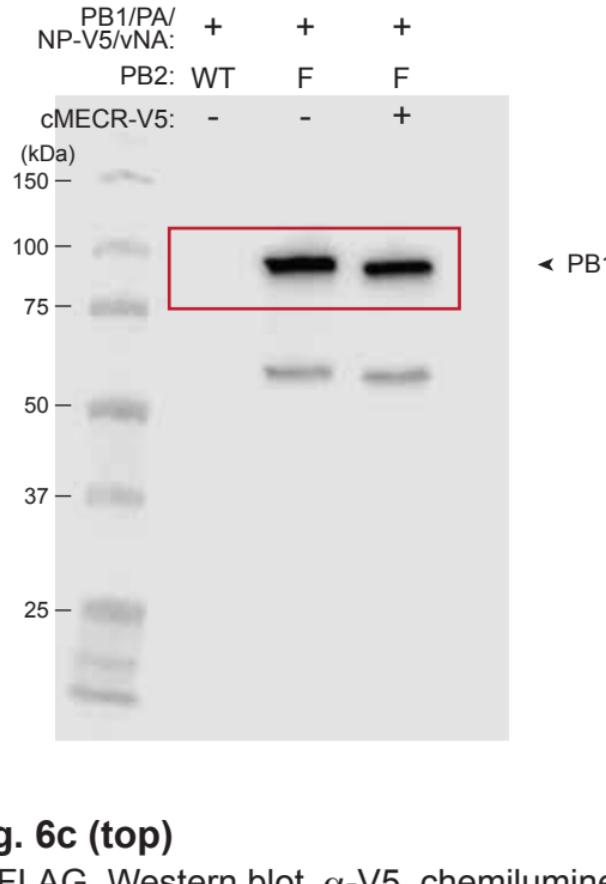
NP-V5: - + + +

c/MECR-mCh: - mCh M cM



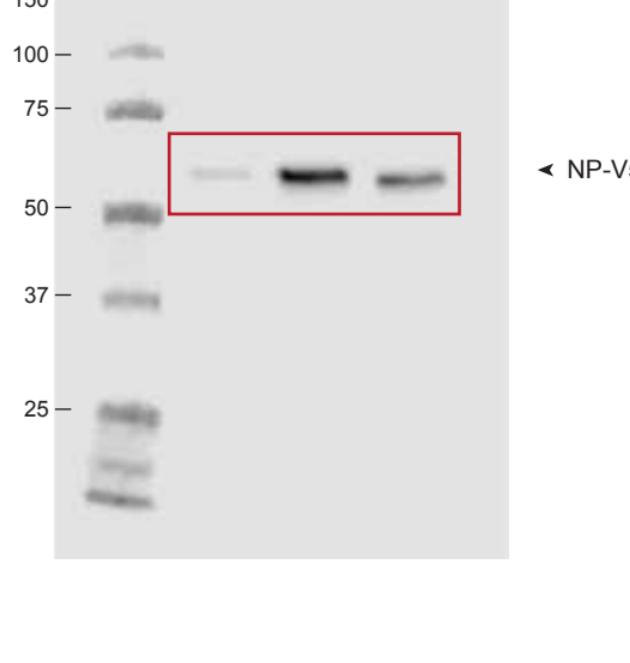
### Fig. 6c (top)

IP:FLAG, Western blot,  $\alpha$ -PB1, chemiluminescence, Odyssey Fc



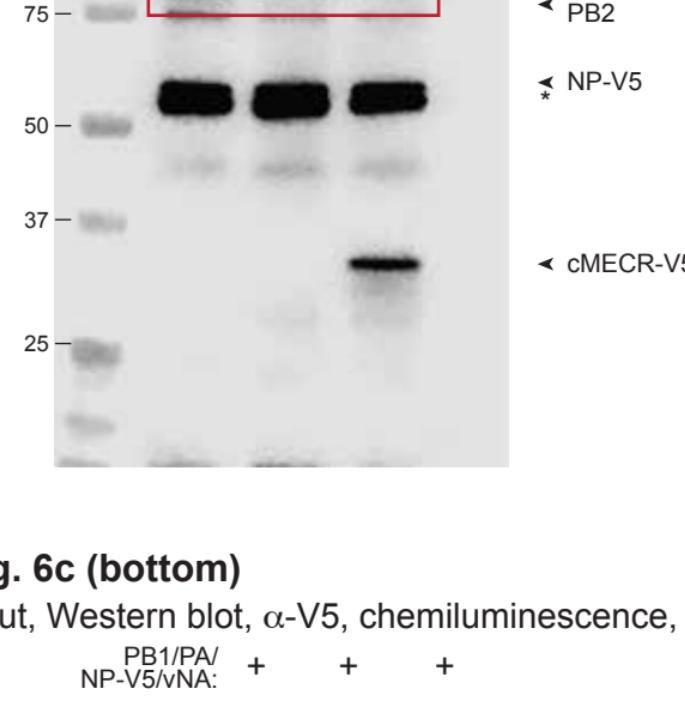
### Fig. 6c (top)

IP:FLAG, Western blot,  $\alpha$ -V5, chemiluminescence, Odyssey Fc



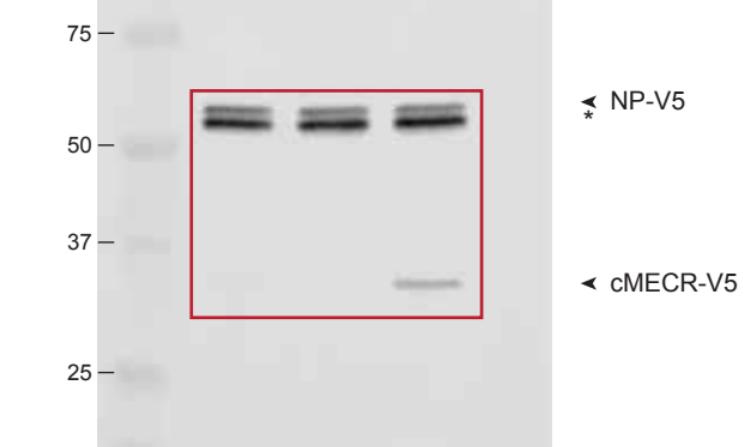
### Fig. 6c (bottom)

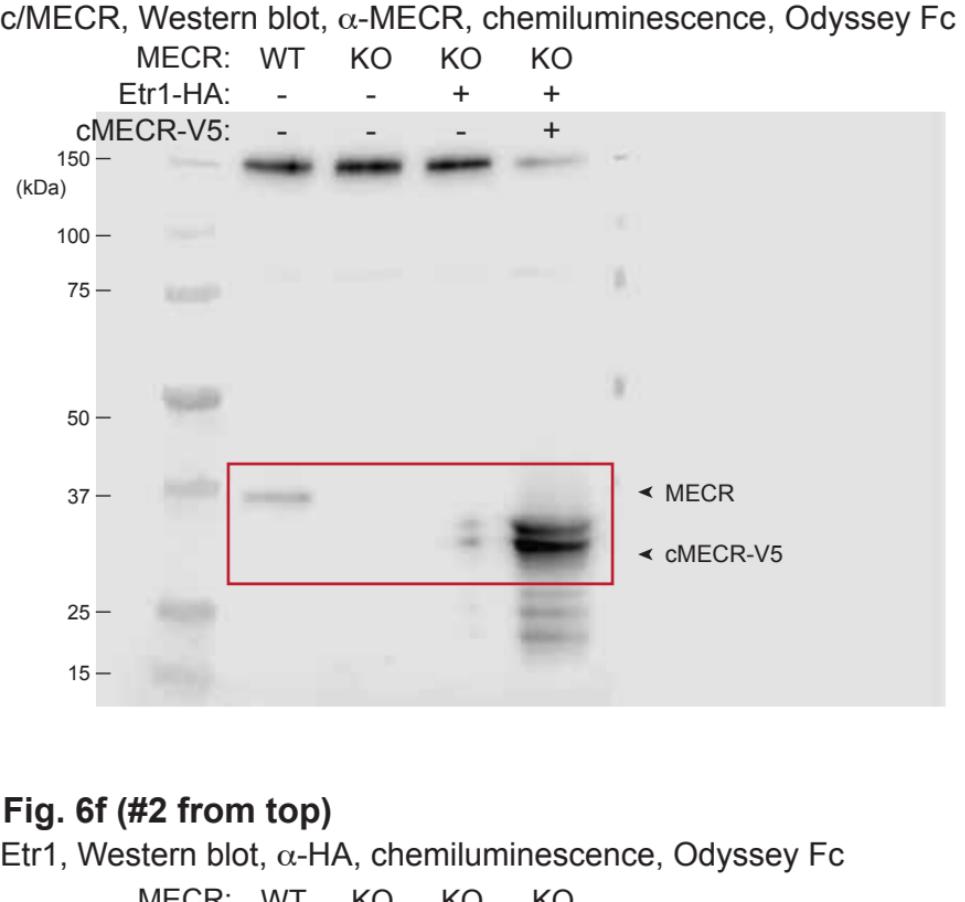
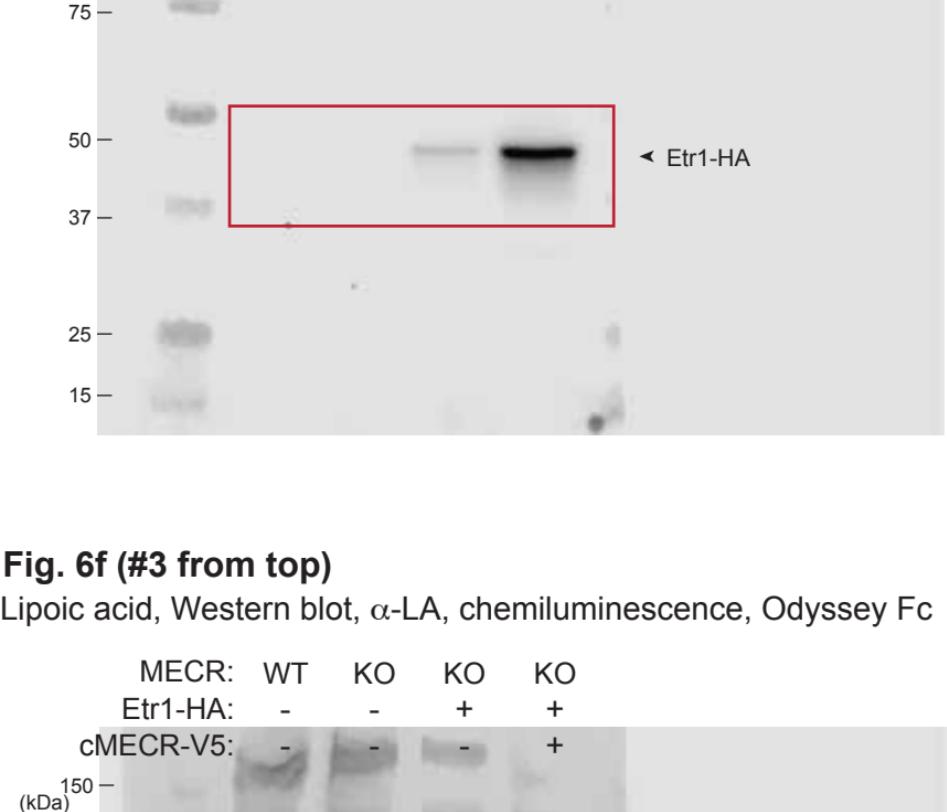
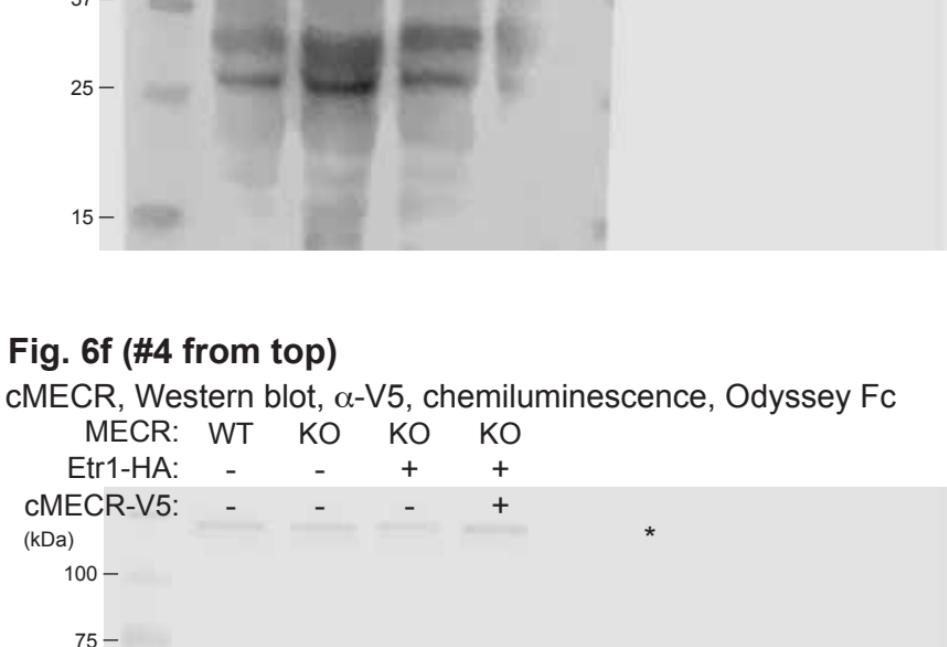
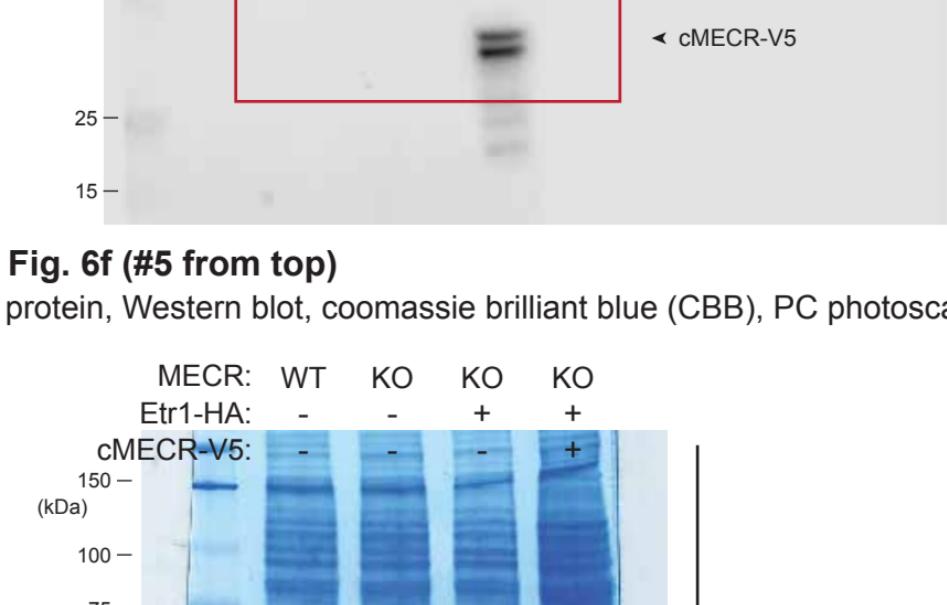
input, Western blot,  $\alpha$ -PB1/PB2, chemiluminescence, Odyssey Fc



### Fig. 6c (bottom)

input, Western blot,  $\alpha$ -V5, chemiluminescence, Odyssey Fc



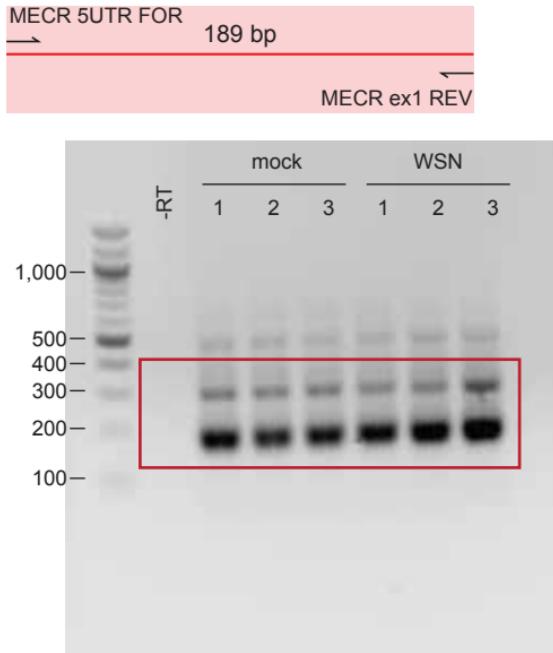
**Fig. 6f (#1 from top)****Fig. 6f (#2 from top)**Etr1, Western blot,  $\alpha$ -HA, chemiluminescence, Odyssey Fc**Fig. 6f (#3 from top)**Lipoic acid, Western blot,  $\alpha$ -LA, chemiluminescence, Odyssey Fc**Fig. 6f (#4 from top)**cMECR, Western blot,  $\alpha$ -V5, chemiluminescence, Odyssey Fc**Fig. 6f (#5 from top)**

protein, Western blot, coomassie brilliant blue (CBB), PC photoscanner

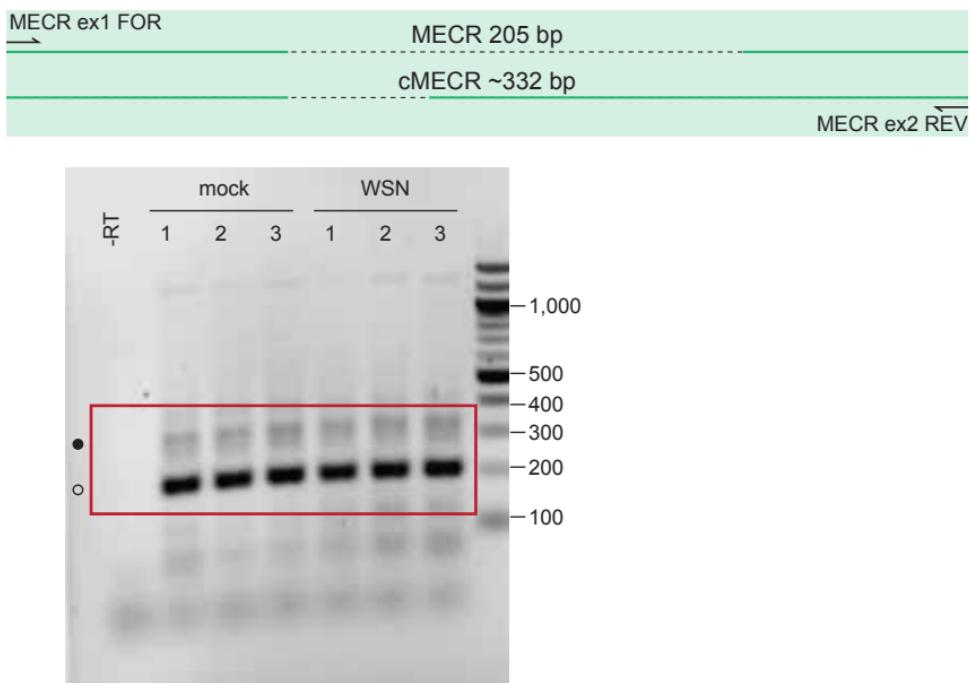


**Fig. S5b (left)**

MECR ex1, Agarose gel, EtBr, 600 NIR channel, Odyssey Fc

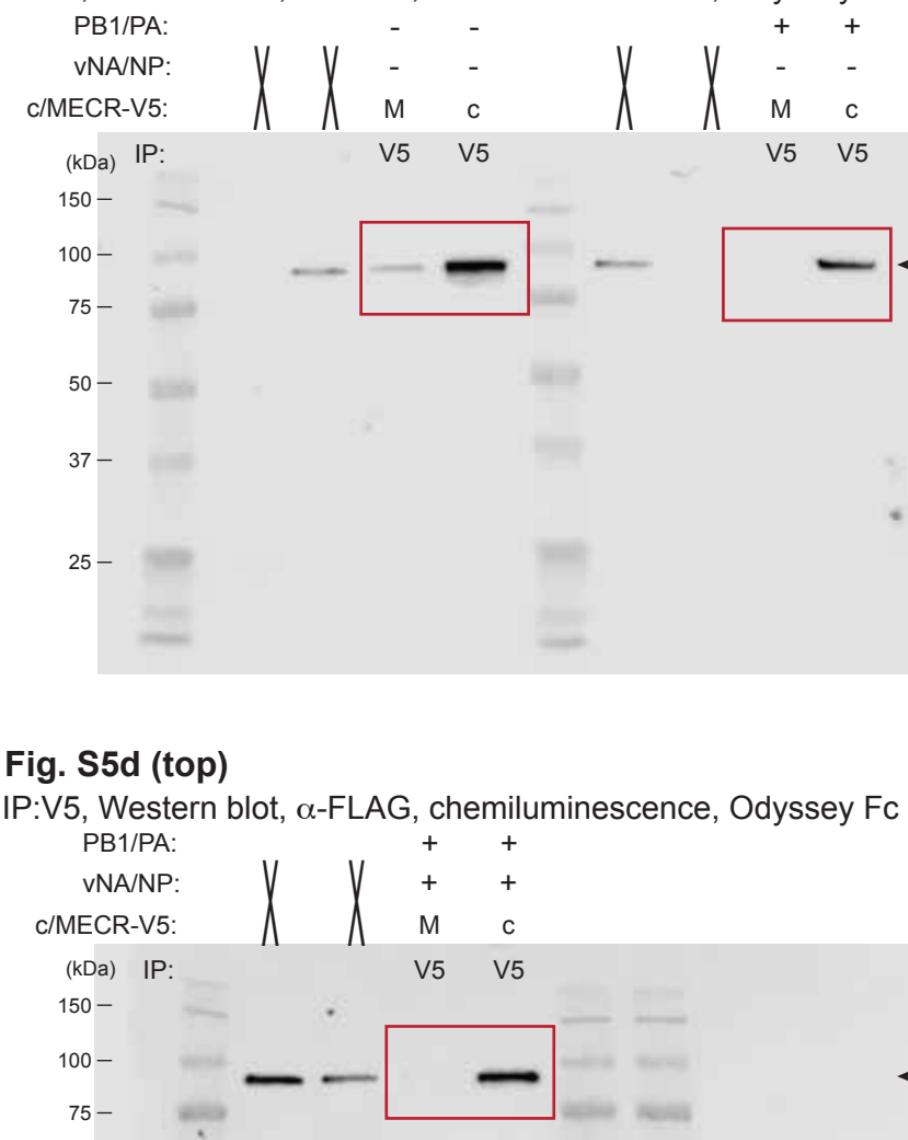
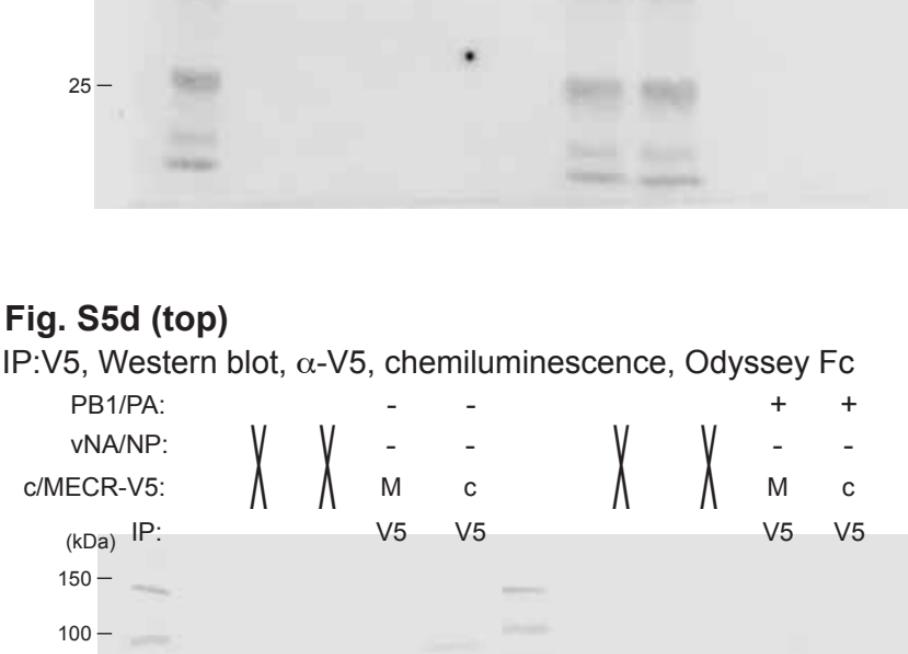
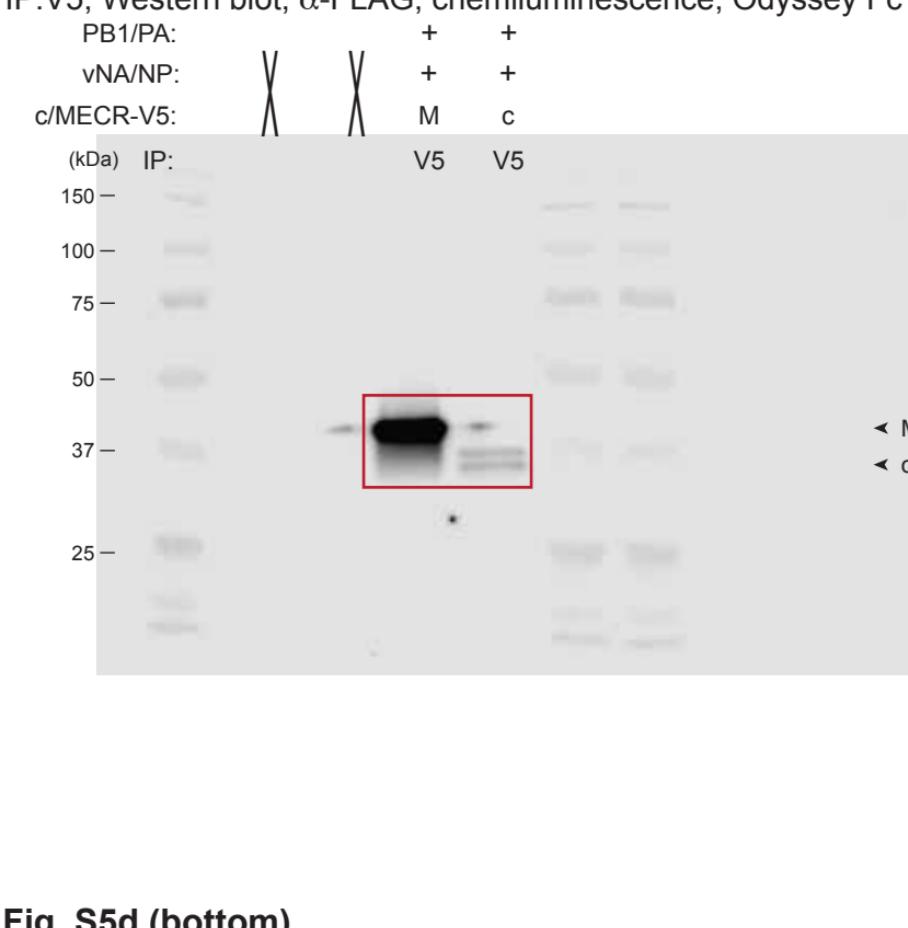
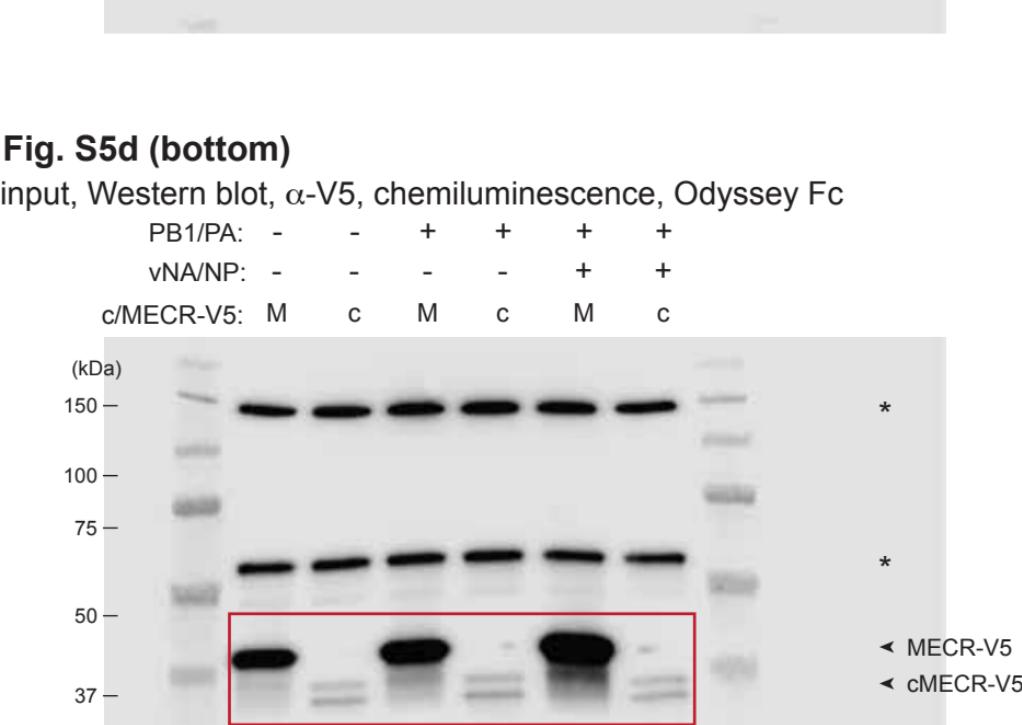
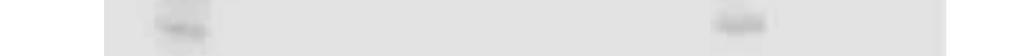
**Fig. S5b (middle)**

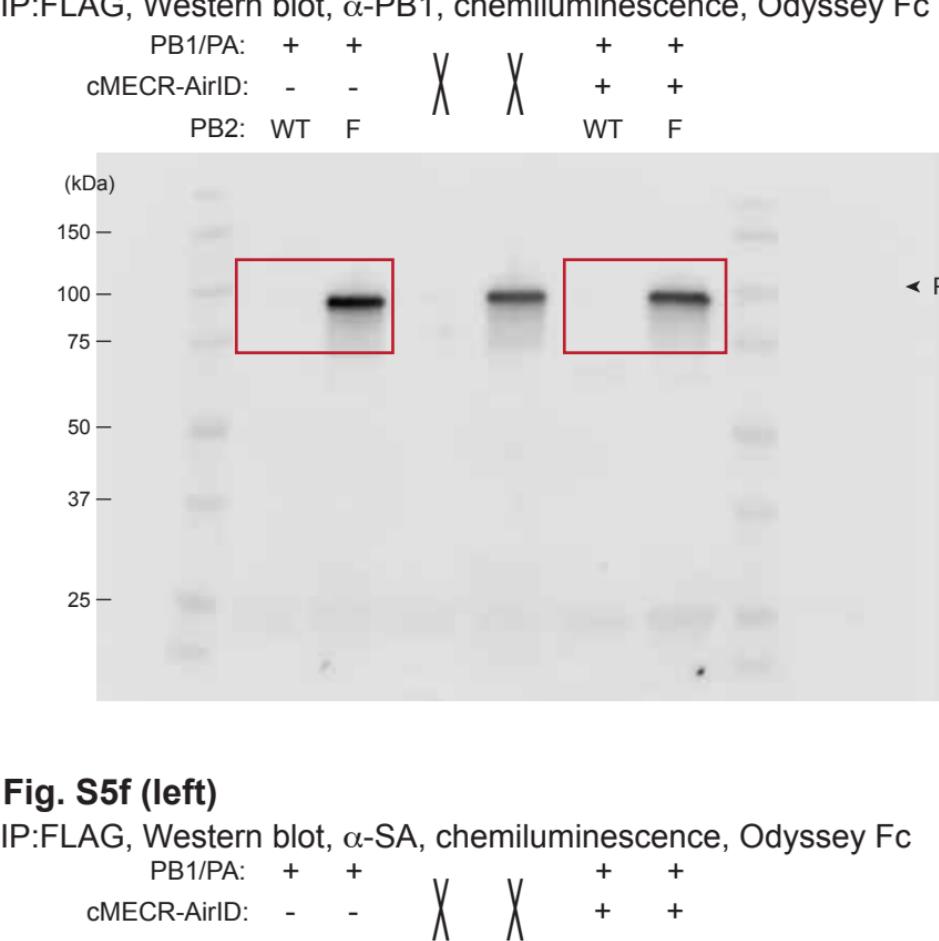
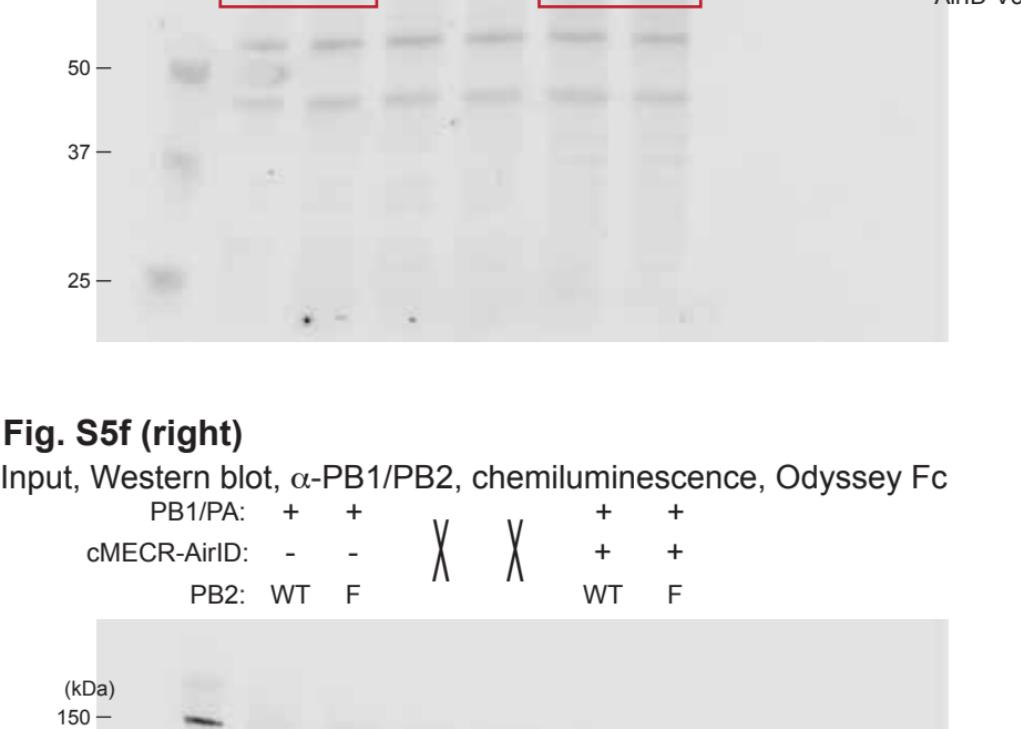
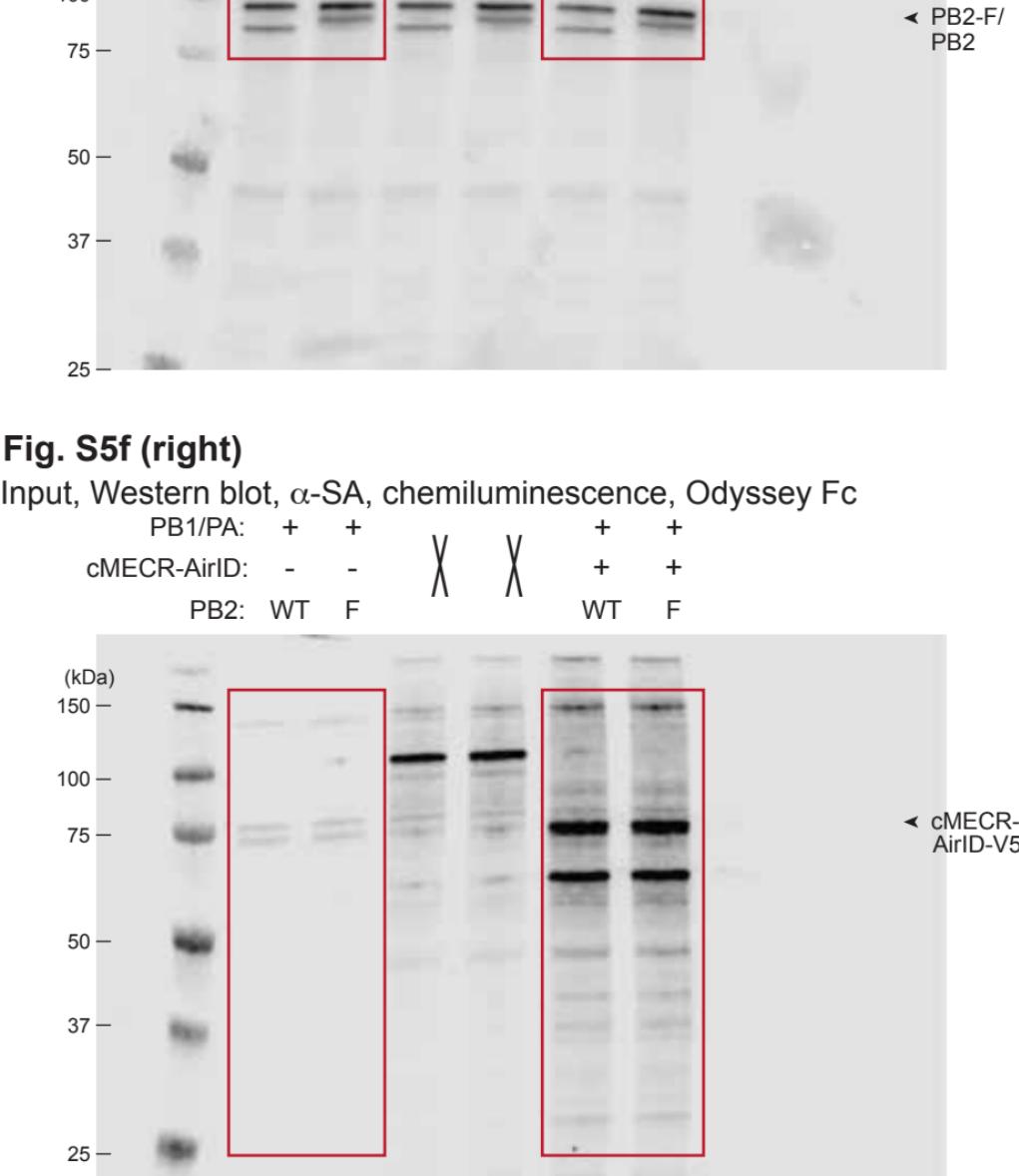
MECR ex1-2, Agarose gel, EtBr, 600 NIR channel, Odyssey Fc

**Fig. S5b (right)**

MECR ex2-3, Agarose gel, EtBr, 600 NIR channel, Odyssey Fc



**Fig. S5d (top)****Fig. S5d (top)****Fig. S5d (top)****Fig. S5d (bottom)**input, Western blot,  $\alpha$ -FLAG, chemiluminescence, Odyssey Fc**Fig. S5d (bottom)**input, Western blot,  $\alpha$ -V5, chemiluminescence, Odyssey Fc

**Fig. S5f (left)****Fig. S5f (left)****Fig. S5f (right)****Fig. S5f (right)****Fig. S5f (right)**