

iScience, Volume 27

## Supplemental information

**Rebalance of mitophagy by inhibiting LRRK2**

**improves colon alterations**

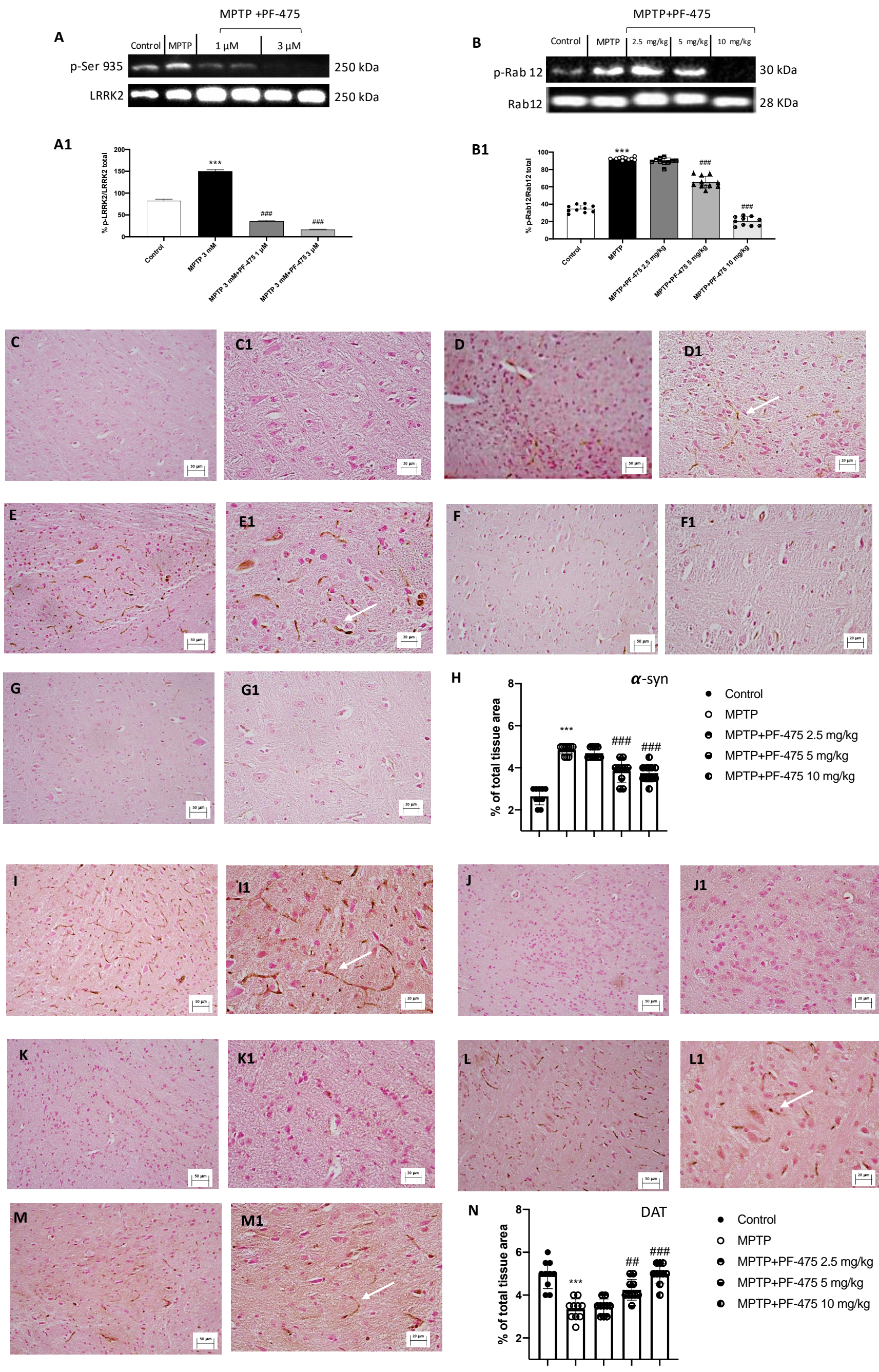
**in an MPTP *in vivo* model**

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**Figure S1. Western blot analysis of p-Ser 935 in SHSY5Y cells, p-Rab12 and IHC of a-syn and DAT in brain tissue, related to Figure 1.**

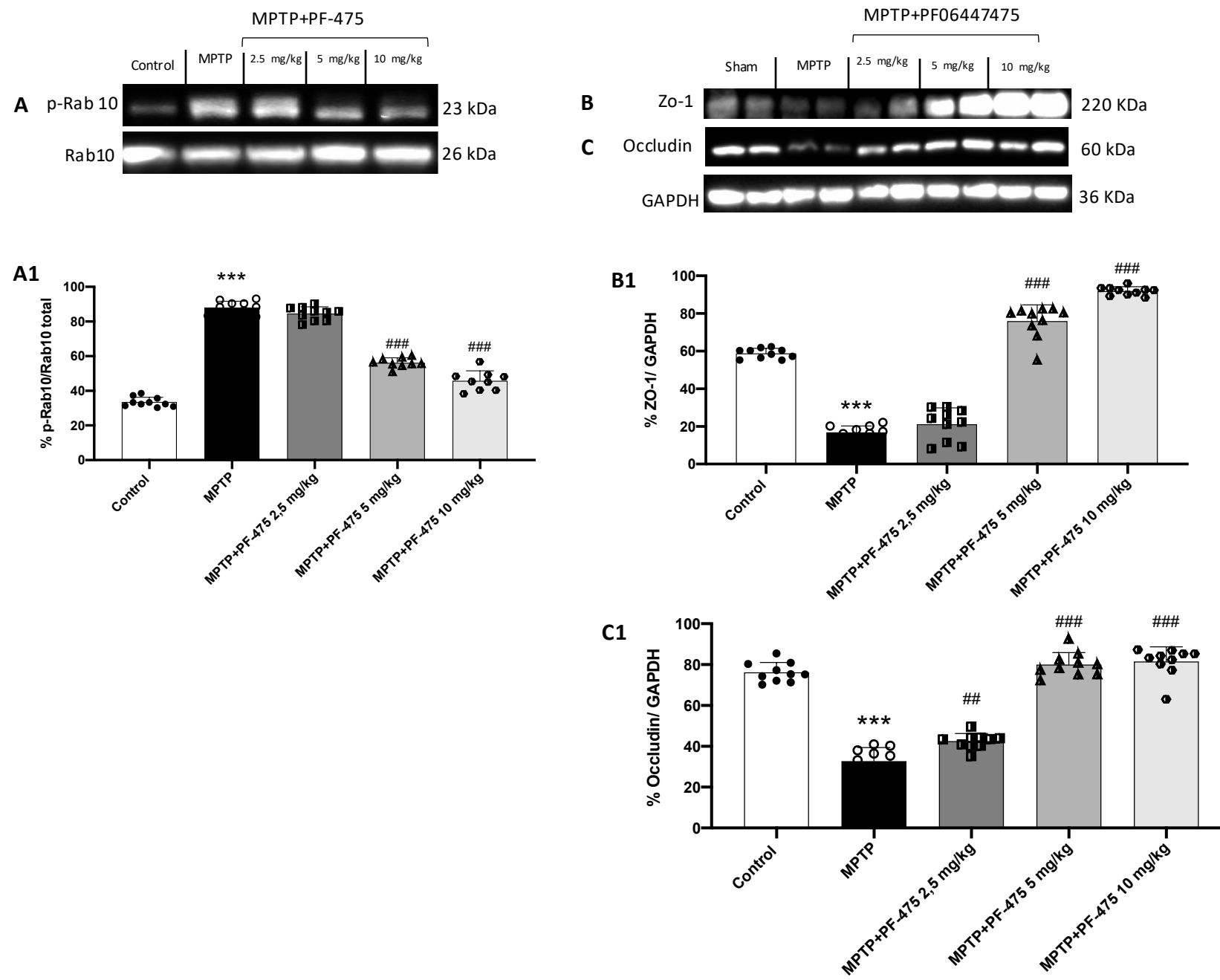
A and A1) Western blot of phosphorylated LRRK2 at Serine 935; B and B1) Western blot of p-Rab 12; C to H) IHC of a-syn in brain tissues; I to N) IHC of DAT in brain tissues. One-way ANOVA test. \*\*\* $p < 0.001$  vs control; ## $p < 0.01$  vs MPTP; ### $p < 0.001$  vs MPTP.





**Figure S2. Western blot analysis of p-Rab10, ZO-1 and occludin in colon tissue, related to Figure 4.**

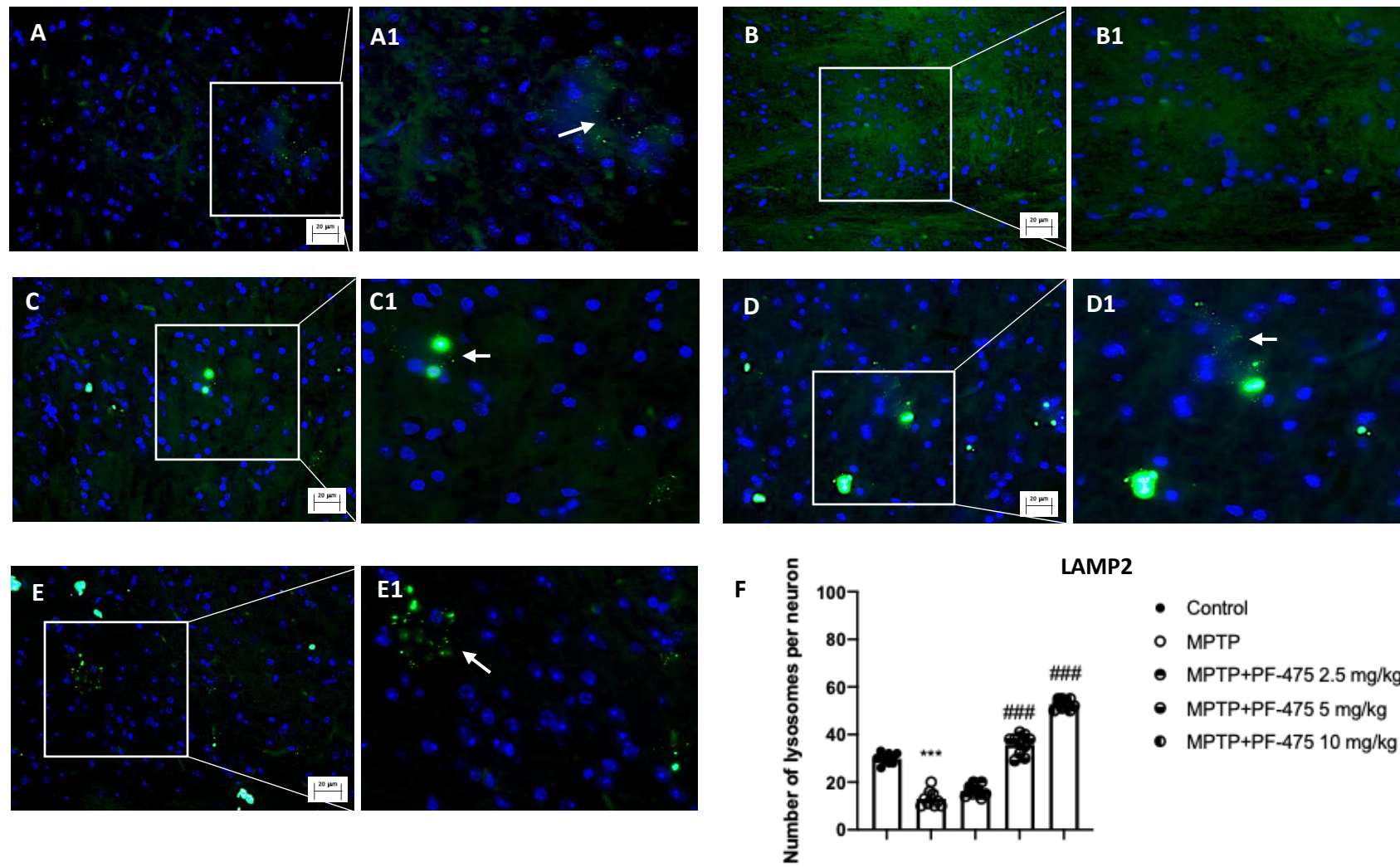
A and A1) Western blot of p-Rab 10 in colon tissues; B and B1) Western blot of ZO-1 in colon tissues; C and C1) Western blot of Occludin in colon tissues. One-way ANOVA test. \*\*\*p < 0.001 vs control; ##p < 0.01 vs MPTP; ###p < 0.001 vs MPTP.



**Figure S3. Immunofluorescence analysis of LAMP2, related to Figure 2.**

A) Sham group; B) MPTP group; C) MPTP + PF-475 2.5 mg/kg; D) MPTP + PF-475 5 mg/kg; E) MPTP + PF-475 10 mg/kg; F) IHC graph.  
One-way ANOVA test. \*\*\*p < 0.001 vs control; ###p < 0.001 vs MPTP.

DAPI/LAMP2

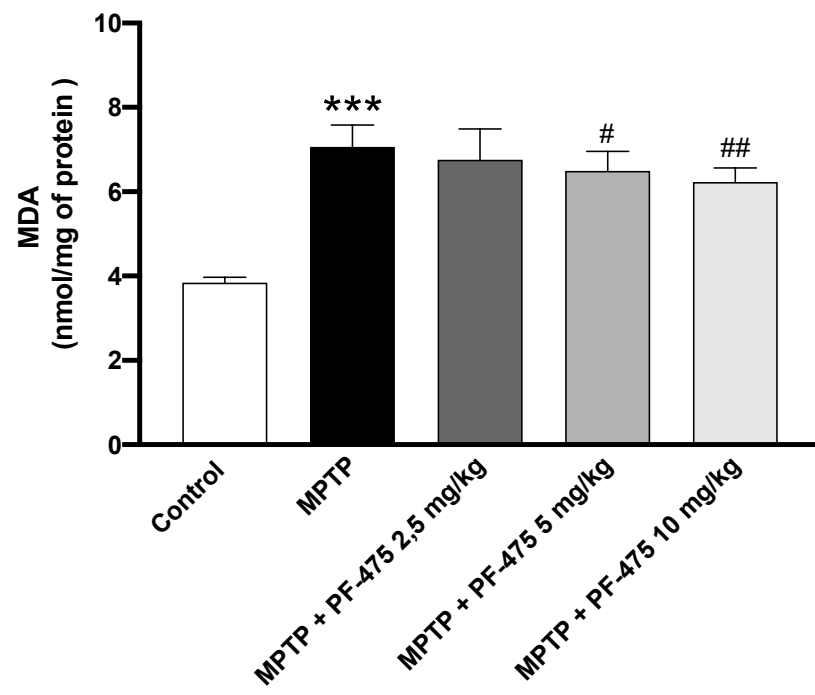


**Figure S4. MDA and ATP assay in brain and colon tissues, related to Figure 2.**

A) MDA assay and B) ATP assay in brain tissues; C) MDA assay and D) ATP assay in colon tissues.

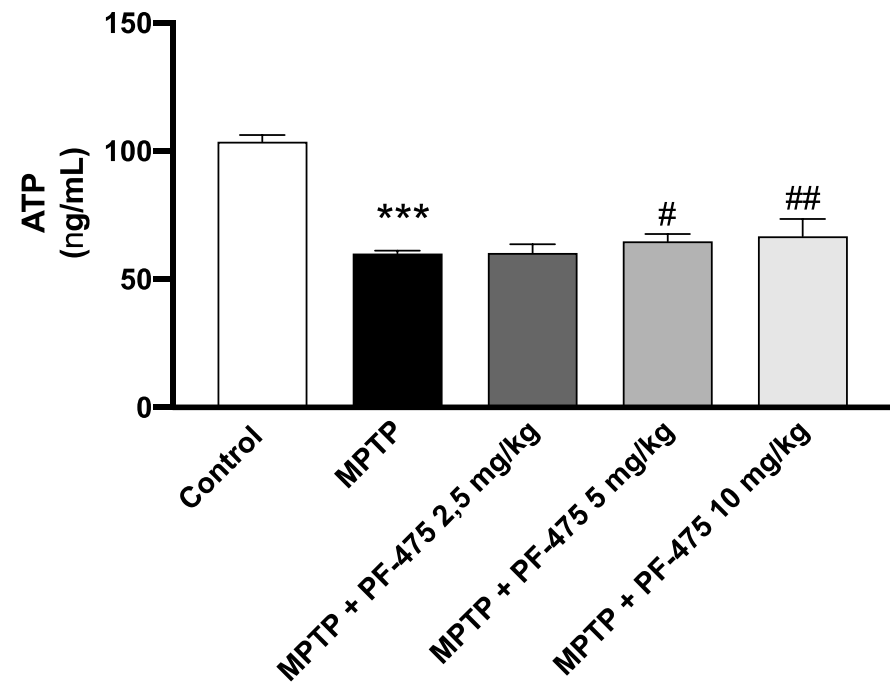
One-way ANOVA test. \*\*\* $p < 0.001$  vs control; # $p < 0.05$  vs MPTP; ## $p < 0.01$  vs MPTP.

**A**

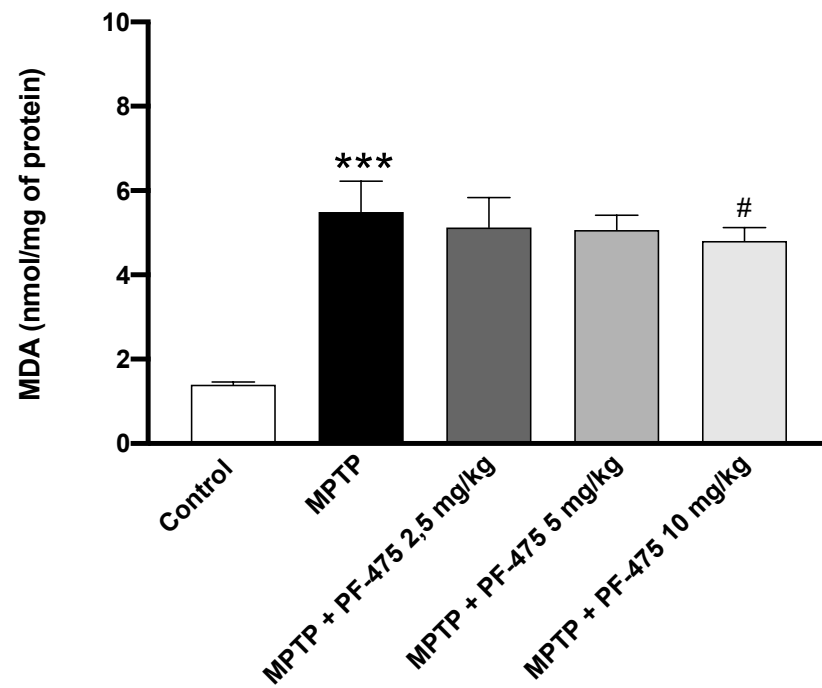


Brain

**B**

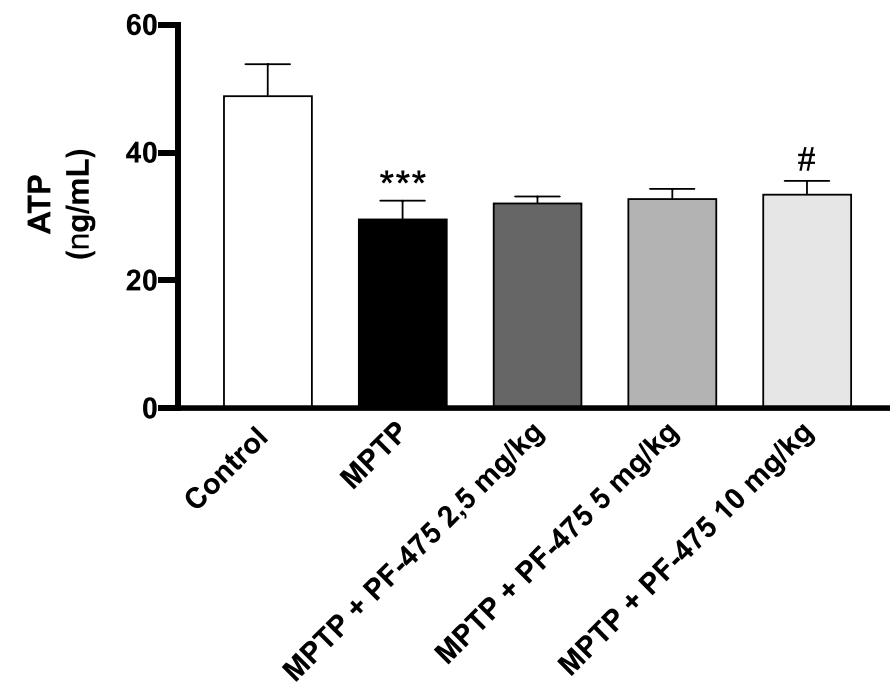


**C**



Colon

**D**

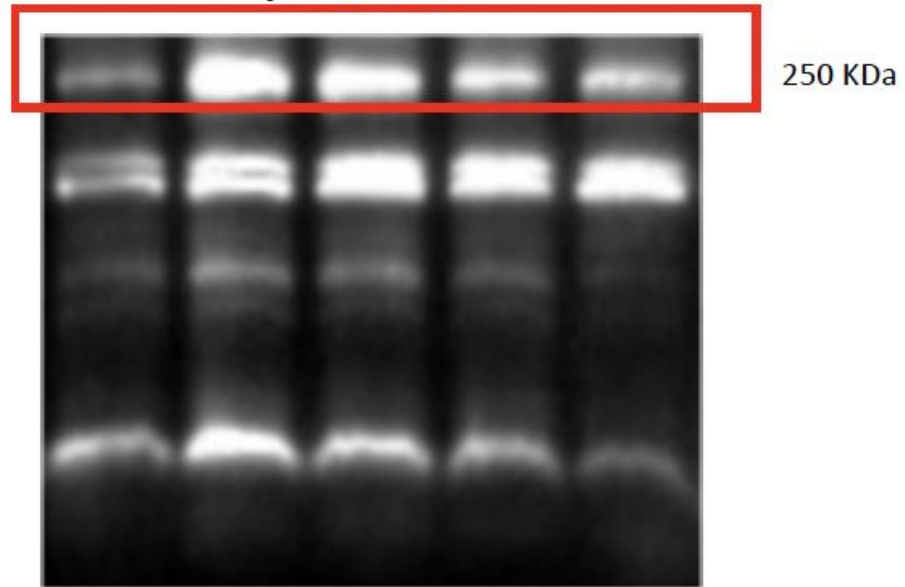


**Data S1. Original blots, related to Figure 1.**

Panel A) Original blot of p-Ser 935 and LRRK2 antibodies; Panels B and C) Original blot of  $\alpha$ -syn; Panel D) Original blot of GAPDH antibody.

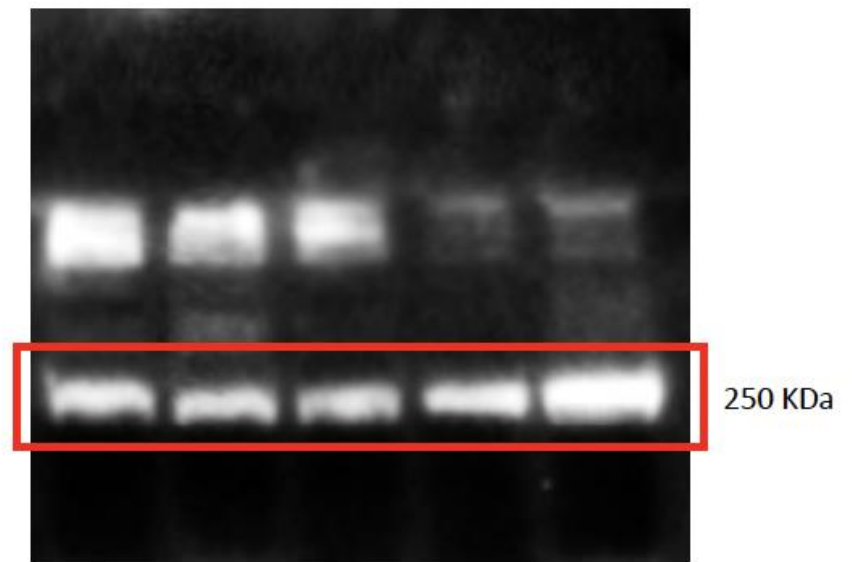
**Panel A**

**p-Ser 935**



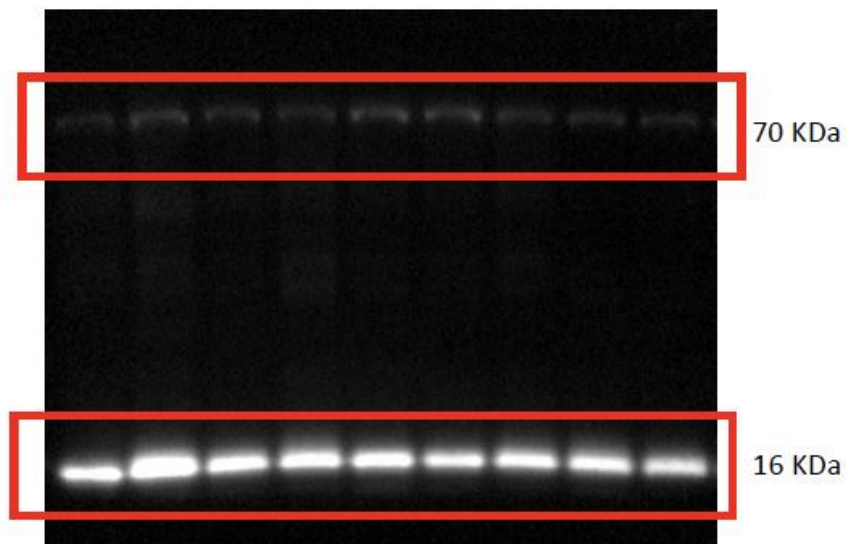
**Panel A**

**LRRK2**



**Panels B and C**

**$\alpha$ -syn**



**Panel D**

**GAPDH**

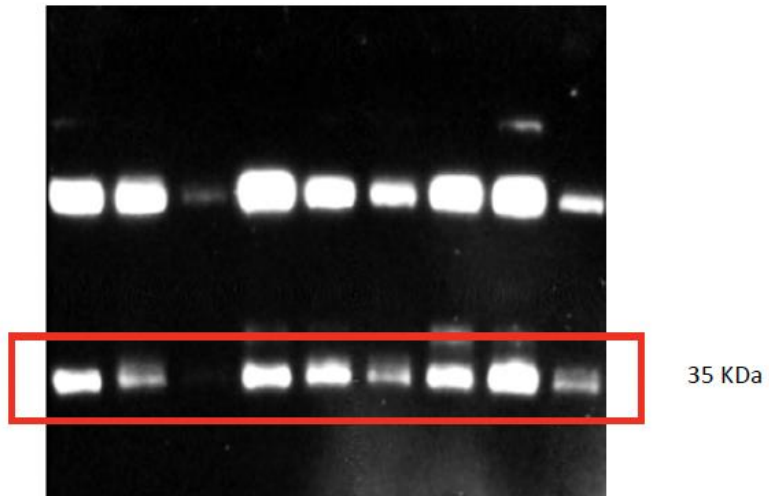


**Data S2. Original blots, related to Figure 2.**

Panel A) Original blot of OPTN antibody; Panel B) Original blot of LAMP; Panel C) Original blot of p-62 antibody; Panel D) Original blot of TNF- $\alpha$  antibody; Panel E) Original blot of GAPDH antibody.

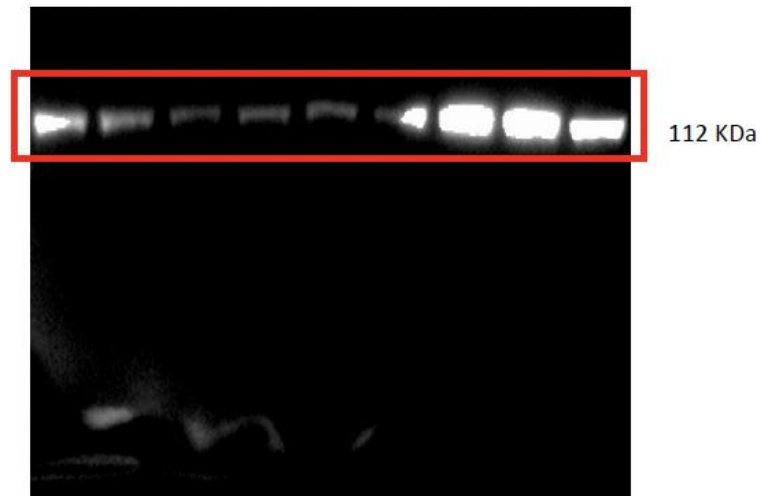
Panel A

OPTN



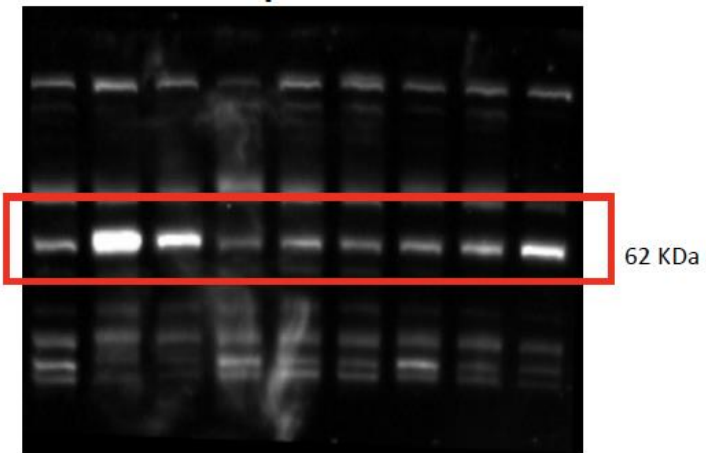
Panel B

LAMP



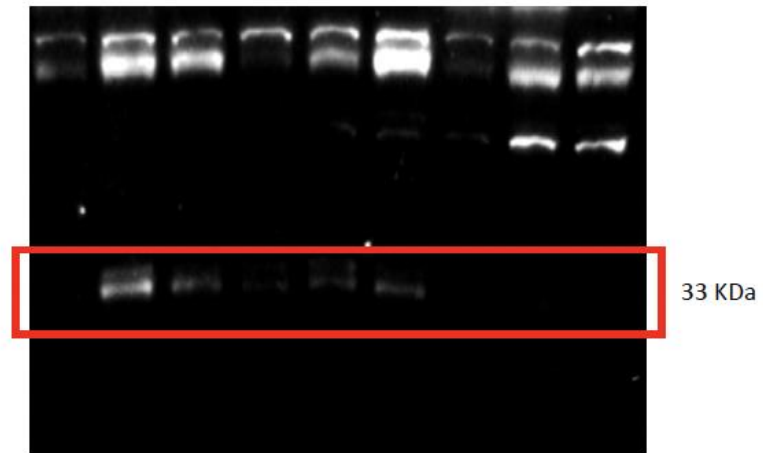
Panel C

p-62



Panel D

TNF- $\alpha$



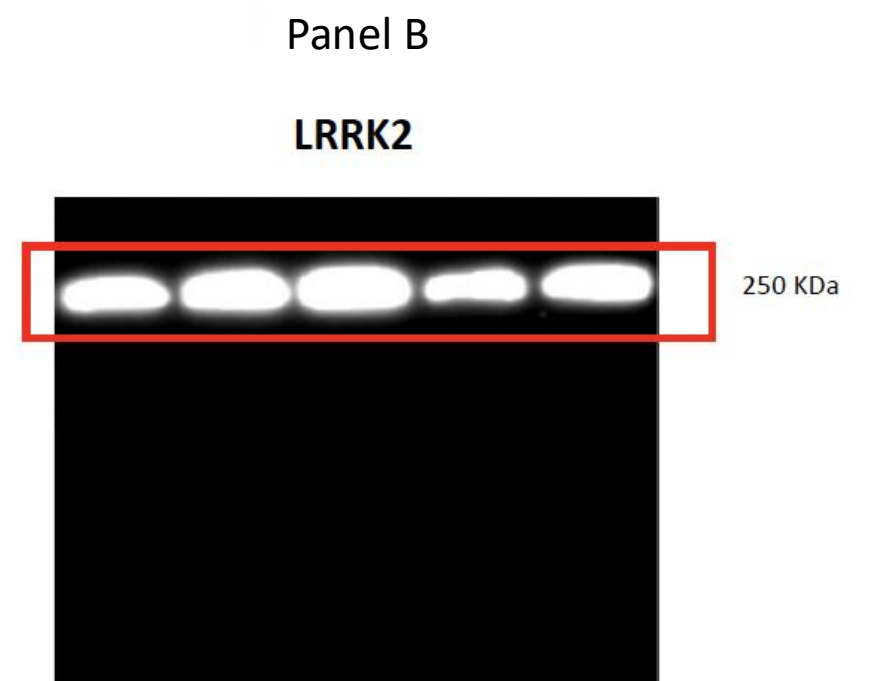
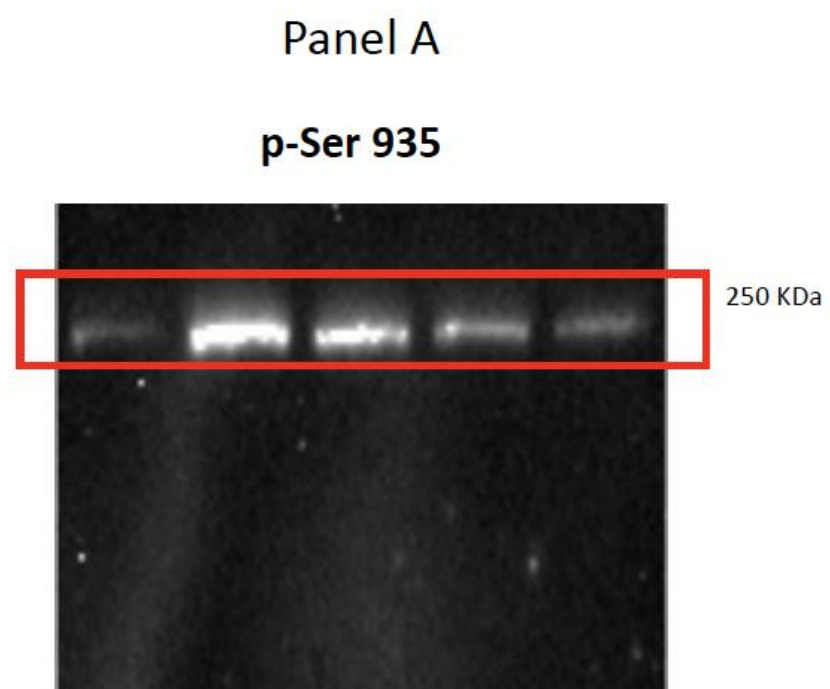
Panel E

GAPDH



**Data S3. Original blots, related to Figure 3.**

Panel A) Original blot of p-Ser 935 antibody; Panel B) Original blot of LRRK2 antibody.



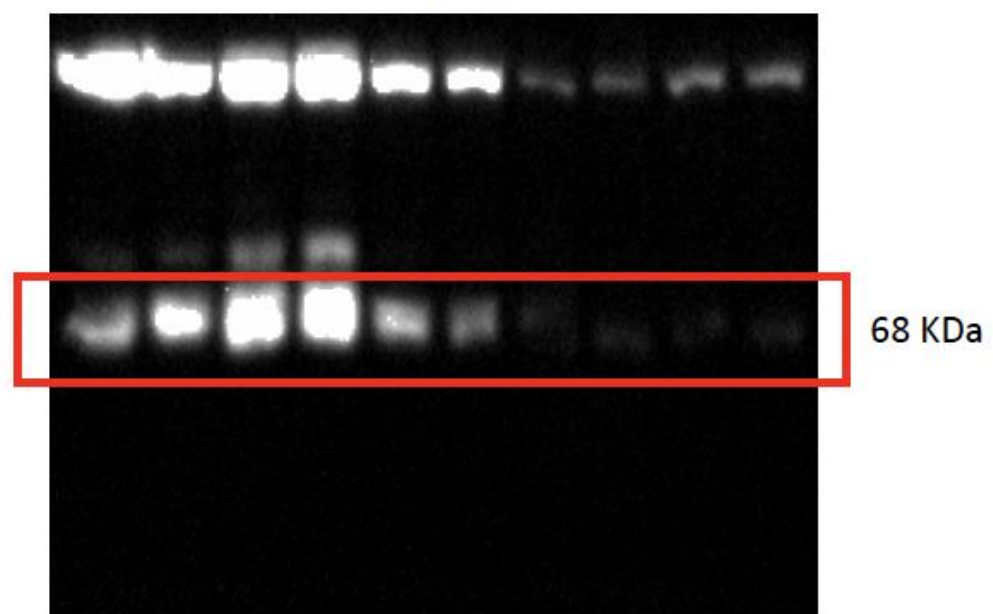


**Data S4. Original blots, related to Figure 4.**

Panel A) Original blot of COX-2 antibody; Panel B) Original blot of iNOS antibody; Panel C) Original blot of GAPDH antibody.

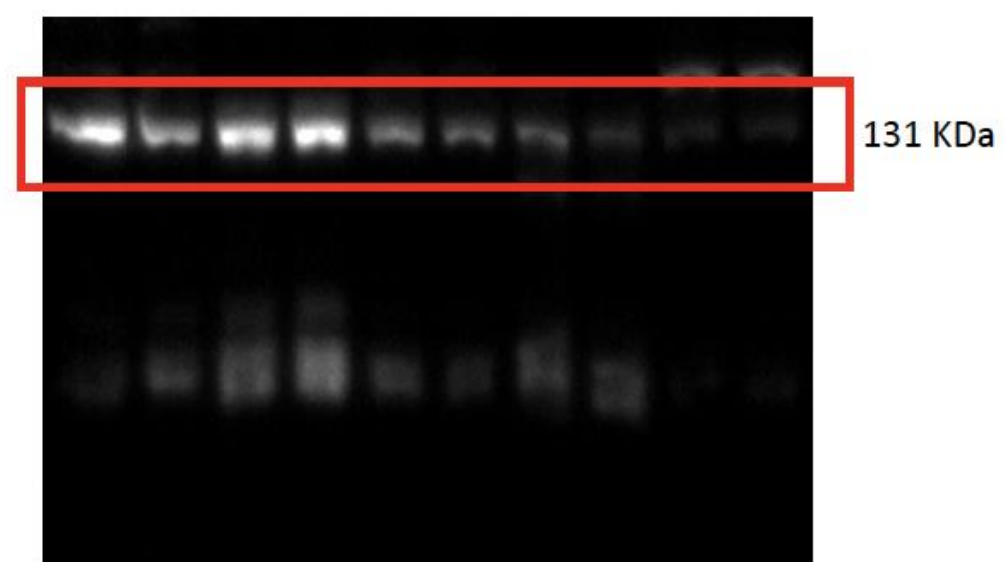
**Panel A**

**COX-2**



**Panel B**

**iNOS**



**Panel C**

**GAPDH**

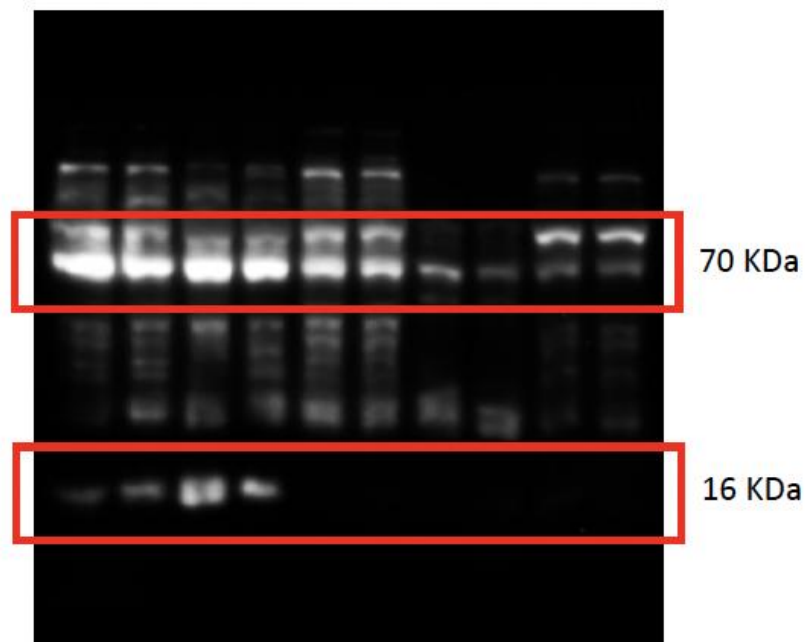


**Data S5. Original blots, related to Figure 6.**

Panel A) Original blot of  $\alpha$ -syn antibody; Panel B) Original blot of GAPDH antibody.

Panel A

$\alpha$ -syn



Panel B

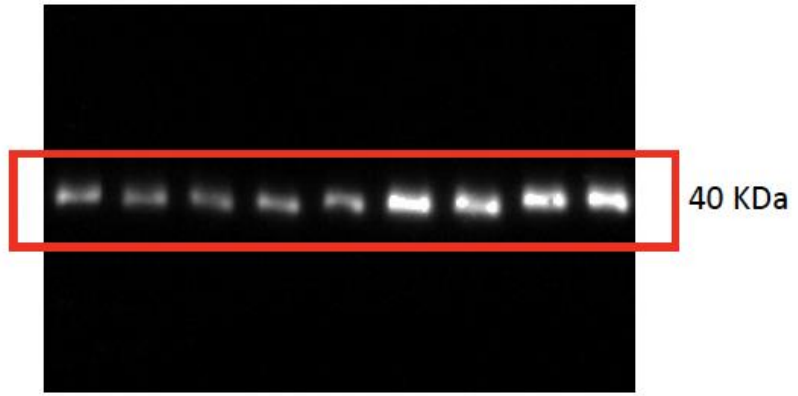
GAPDH



**Data S6. Original blots, related to Figure 6.**

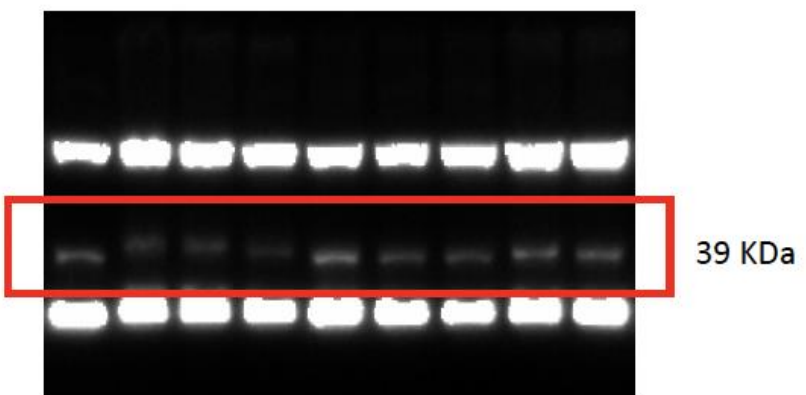
Panel A) Original blot of PGP 9.5 antibody; Panel B) Original blot of NSE antibody, Panel C) Original blot of GAPDH antibody.

Panel A **PGP9.5**



Panel B

**NSE**



Panel C

**GAPDH**



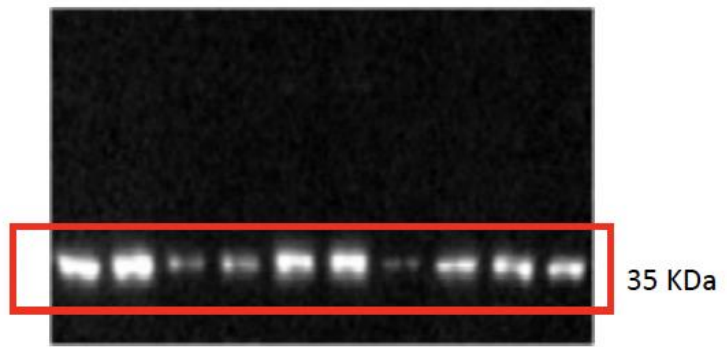


**Data S7. Original blots, related to Figure 7.**

Panel A) Original blot of OPTN antibody; Panel B) Original blot of LAMP2 antibody, Panel C) Original blot of p-62 antibody; Panel D) Original blot of TNF- $\alpha$  antibody; Panel E) Original blot of GAPDH.

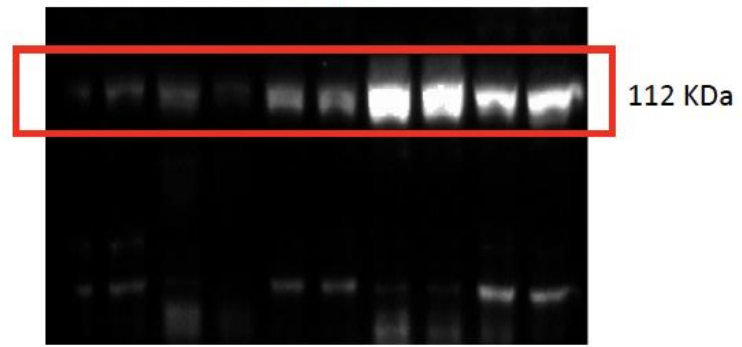
Panel A

OPTN



Panel B

LAMP2



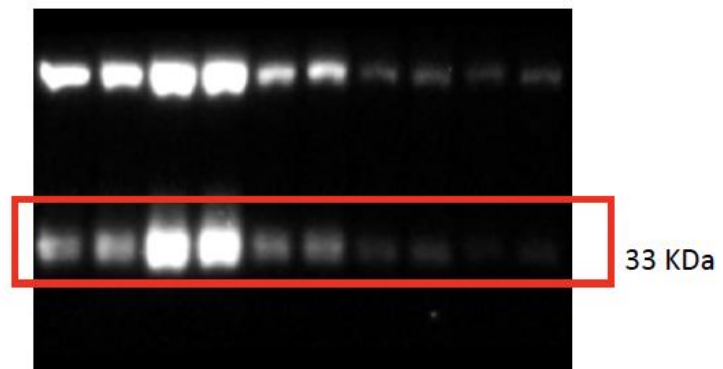
Panel C

p-62



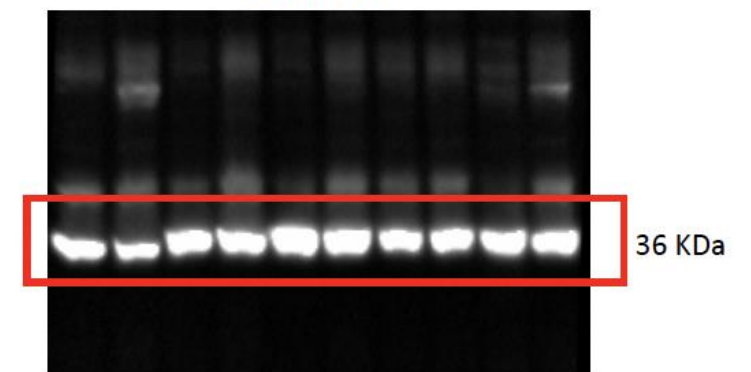
Panel D

TNF- $\alpha$



Panel E

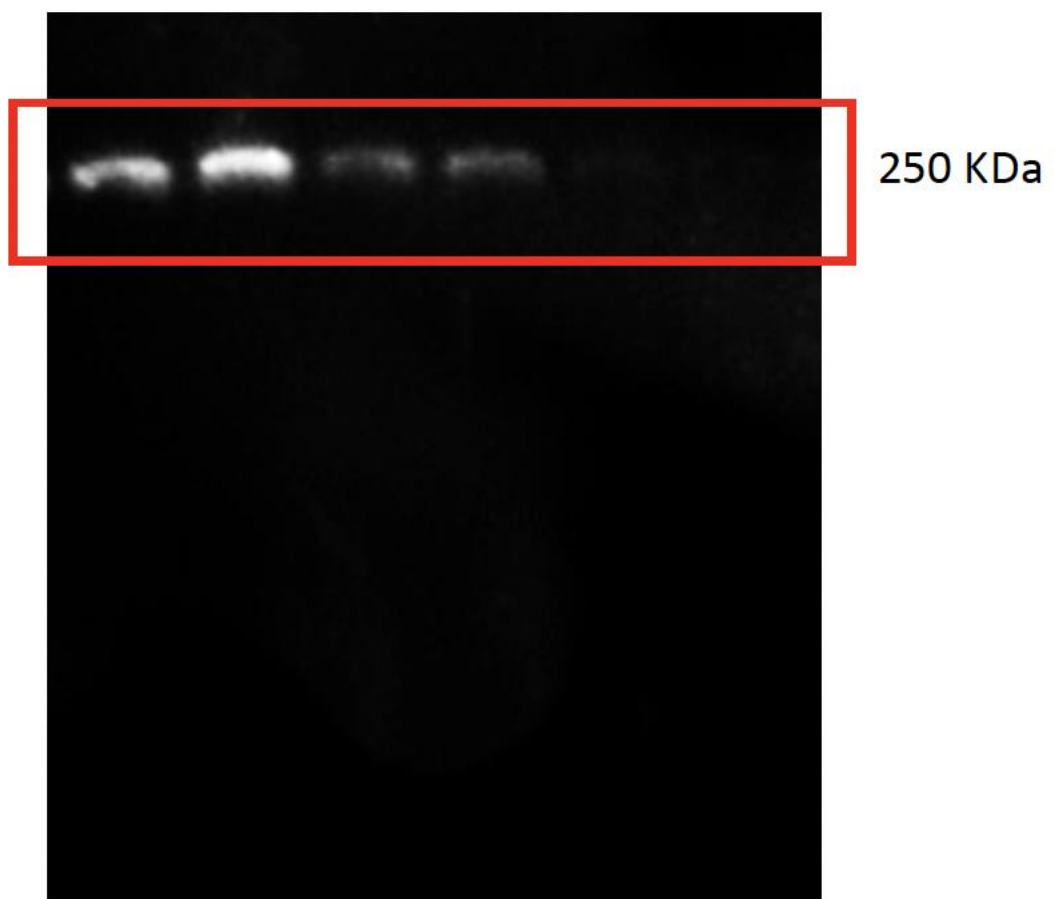
GAPDH



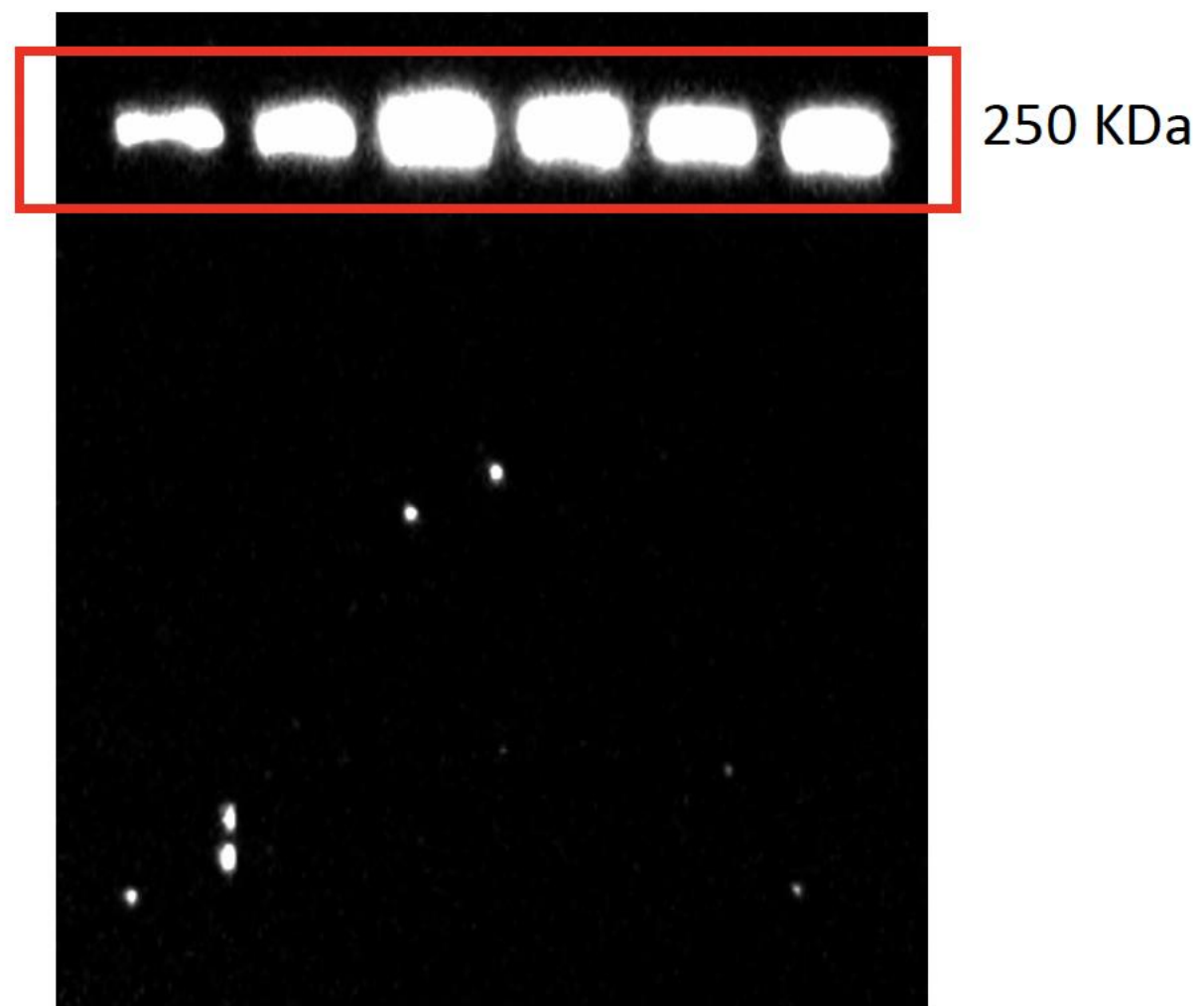
**Data S8. Original blots, related to Supplementary Figure S1.**  
Panel A) Original blots of p-Ser 935 and LRRK2 antibodies.

Panel A

p-Ser 935

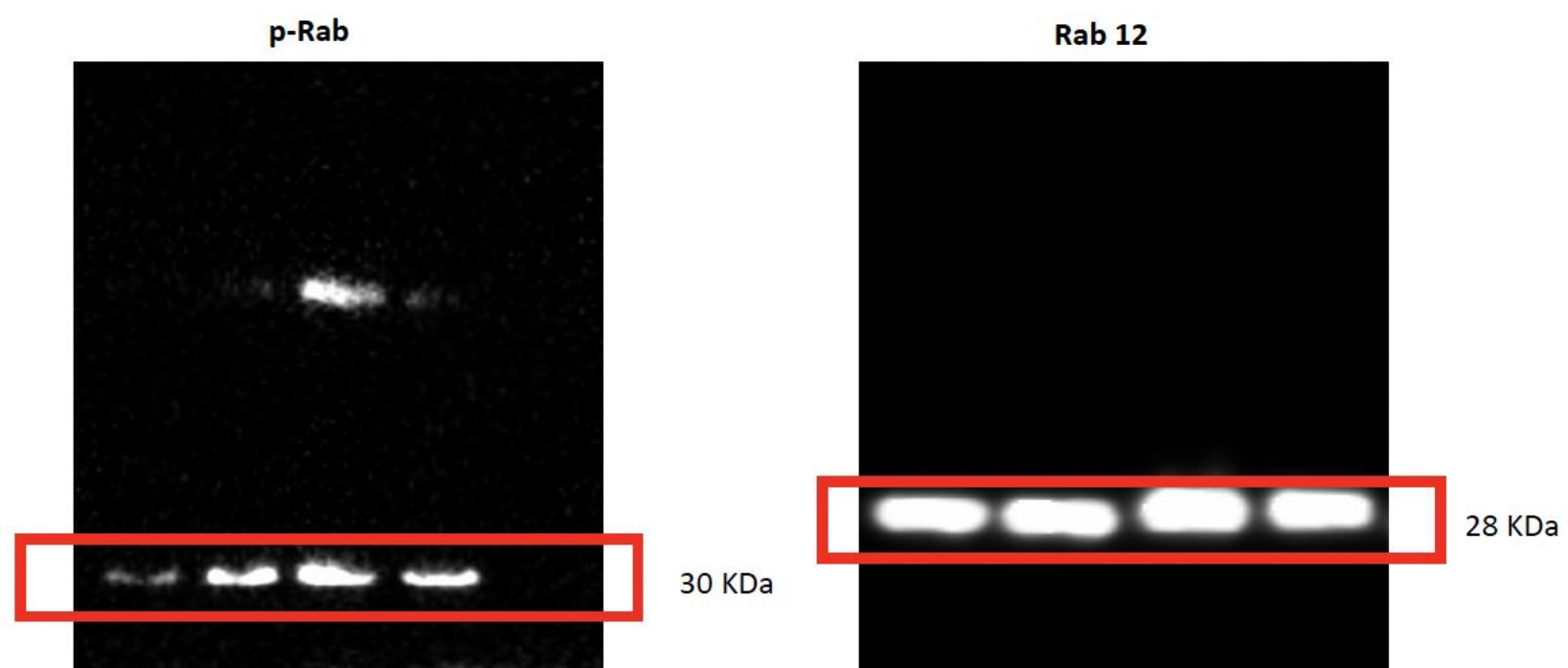


LRRK2



**Data S9. Original blots, related to Supplementary Figure S1.**  
Panel B) Original blot of p-Rab and Rab 12 antibodies.

Panel B

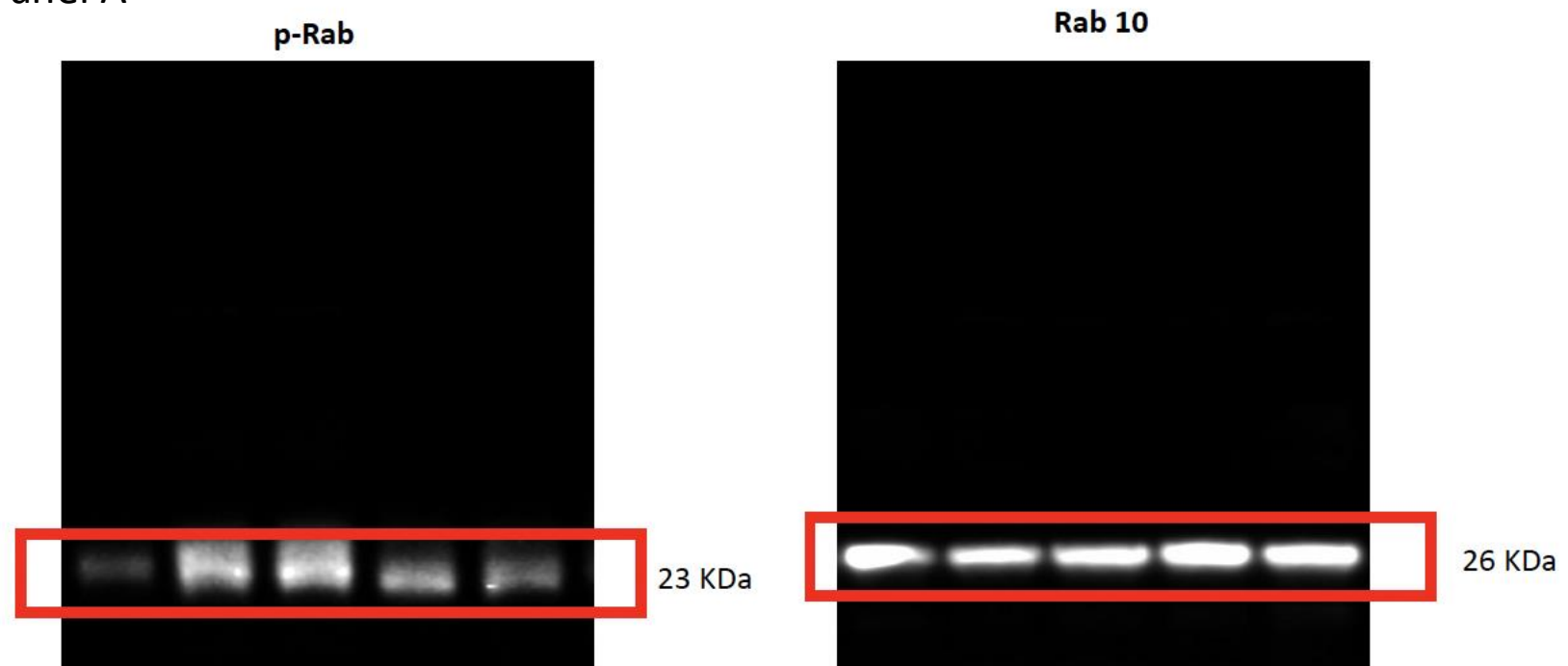




**Data S10. Original blots, related to Supplementary Figure S2.**

Panel A) Original blot of p-Rab and Rab 10 antibodies.

Panel A



**Data S11. Original blots, related to Supplementary Figure S2.**

Panel B) Original blot of ZO-1 antibody; Panel C) Original blot of Occludin antibody.

