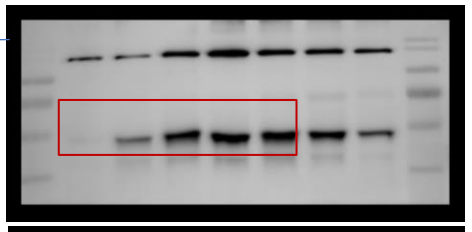
Full unedited blot/gel

We normally used the same samples to run western blotting multiple times in independent experiments. Western blotting can analyze multiple proteins on the same blot for quantification and rigorous evaluation of the relative levels of detected proteins. Therefore, it is common practice to section the blot into strips containing proteins of varying molecular weights, each probed with different antibodies. A blot was also stripped to allow for additional probing with different antibodies. This method not only conserves precious samples obtained from small brain regions or limited non-human primate tissues but also enhances the efficiency of analysis.

When repeating the same samples using different gels, we typically also probed the same blot with antibodies for housekeeping gene products (such as vinculin, GAPDH, and others) to ensure an unbiased comparison of results from different gels under consistent conditions. For some proteins that do not exhibit changes in Parkin or PINK1 knocked down tissues, we also incorporated loading controls in the unedited blots. However, we specified that certain loading controls were omitted from the main figures due to space constraints or the presence of other protein bands that could serve as loading controls.

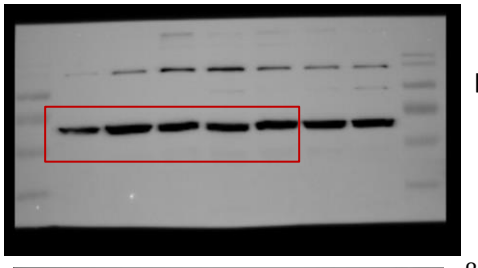
The following unedited blot/gel images are for the representative results in the manuscript.

Fig 1C

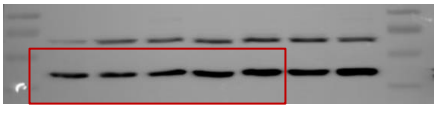


Parkin

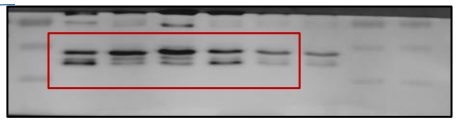
The same gel



p62

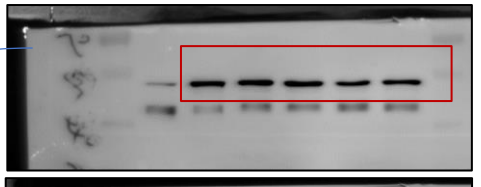


β-actin (not included in main figure because of space limitations and the presence of other similar loading control)

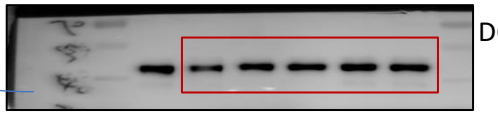


NeuN

GAPDH

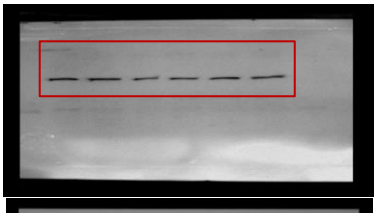


GFAP

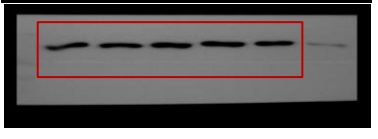


DCX

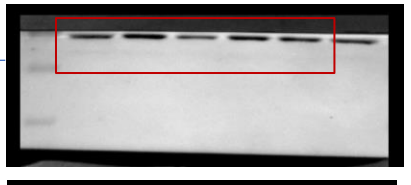
Vinculin



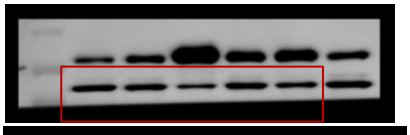
mTOR



Vinculin (not included in main figure because of space limitations and the presence of other similar loading control)



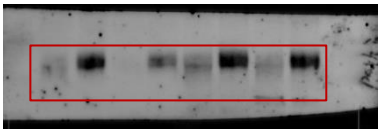
CRMP2



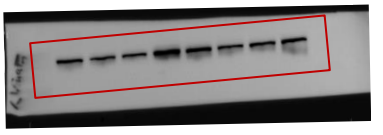
psd95

β-actin

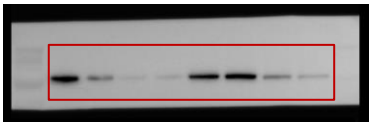
Fig 1D



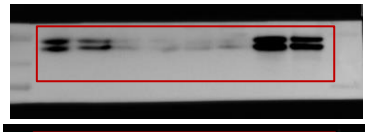
Parkin



Vinculin

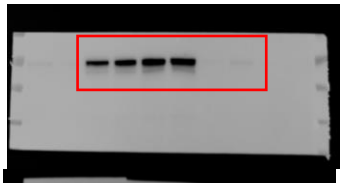


Psd95

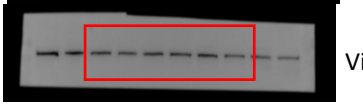


NeuN

GAPDH

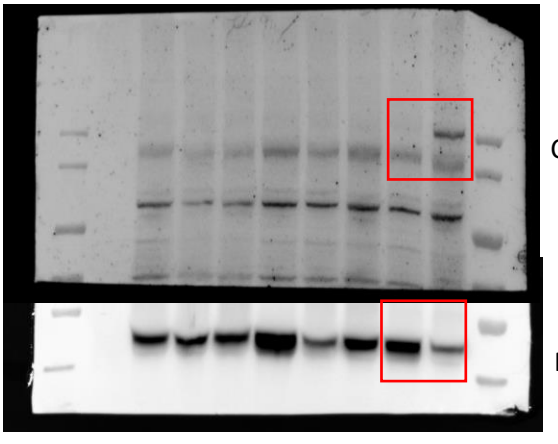


TH



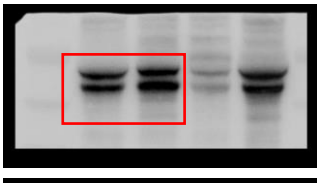
Vinculin

Fig. 1G



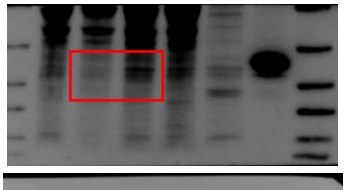
Cas9

Parkin

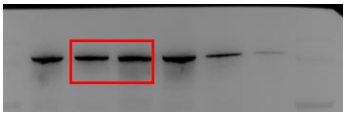


NeuN

Vinculin

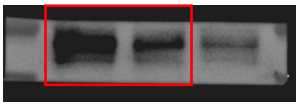


GFP

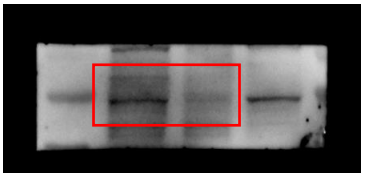


vinculin

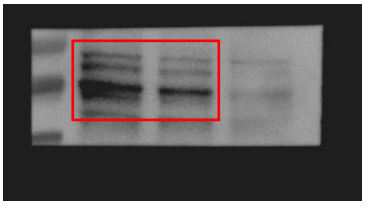
Fig 3C



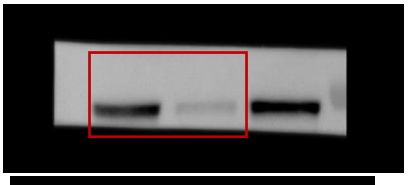
Parkin



S65
Parkin



NeuN



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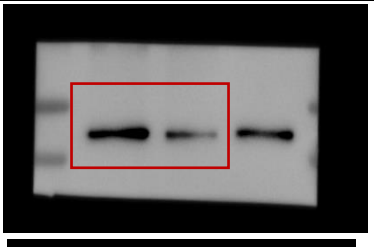
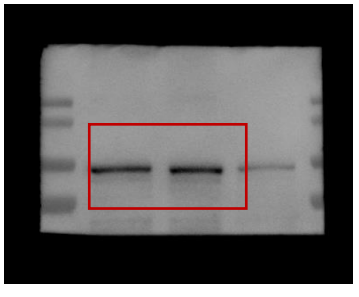


SNAP25



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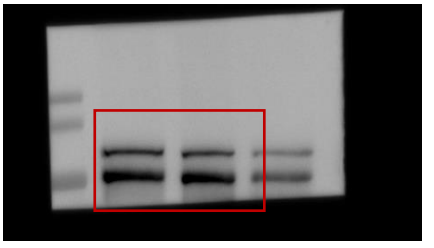
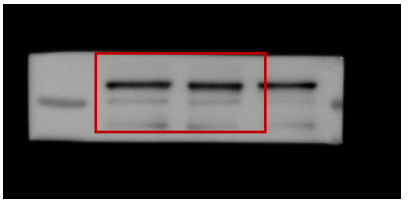
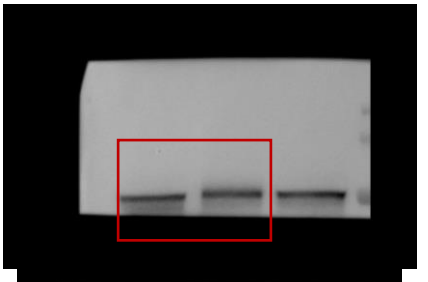


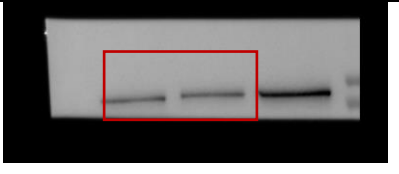
OPA1



VDAC1

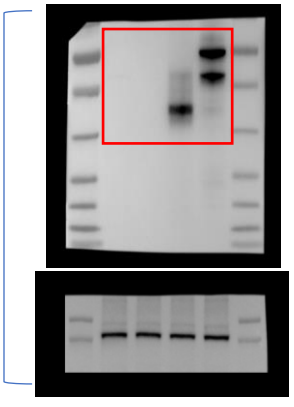


Drp1



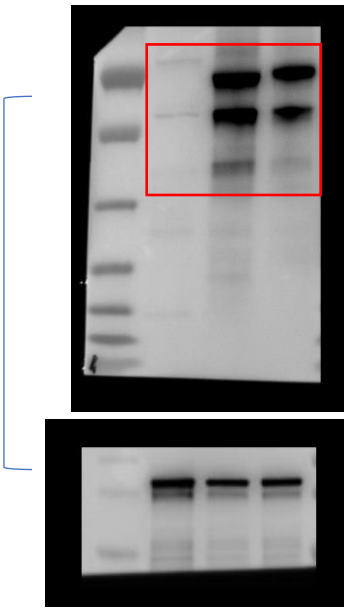
Vinculin

Fig. 4B



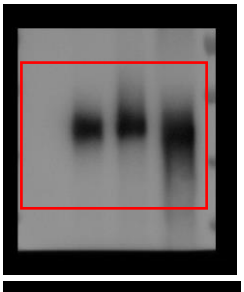
PINK1

Vinculin

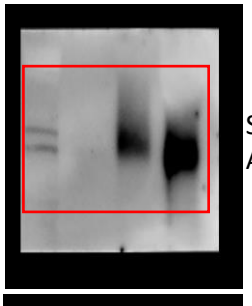


PINK1

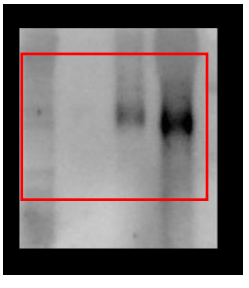
Vinculin (not included in main figure because of space limitations and the presence of other similar loading control)



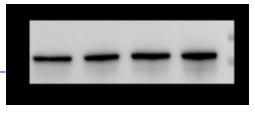
Parkin



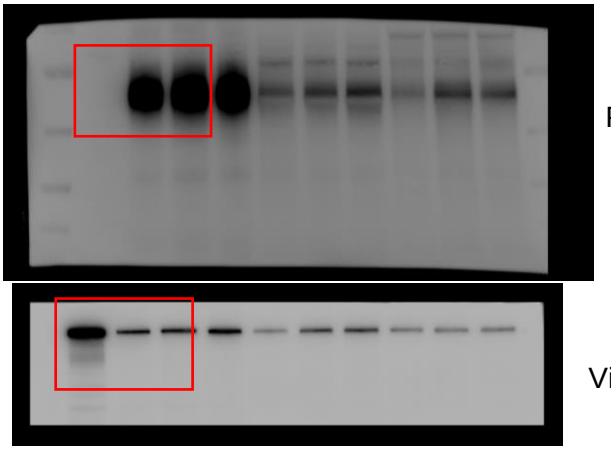
S65-AF3500



S65-cst

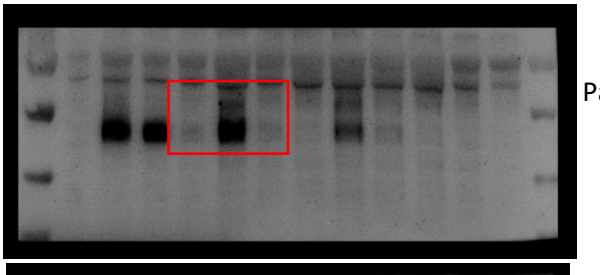


Vinculin

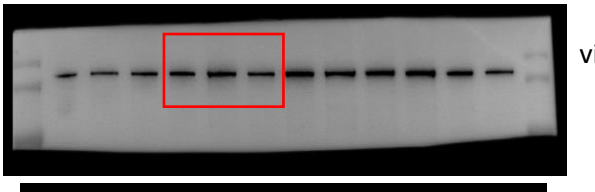


Parkin

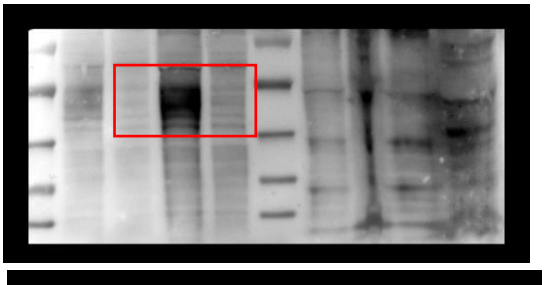
Vinculin



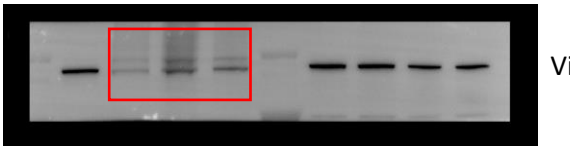
Parkin-S65 (AF3500)



vinculin

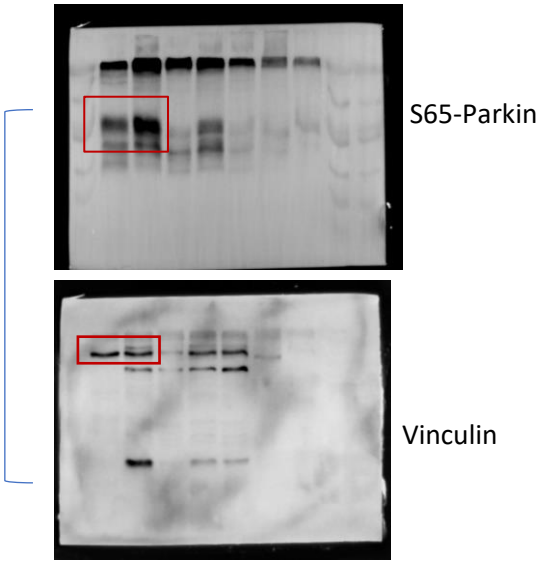


cst-s65



Vinculin

Fig. 4C


S65-Parkin
Vinculin

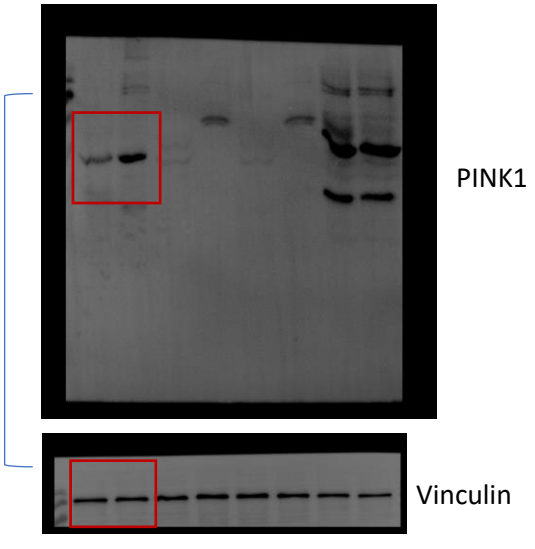

PINK1
Vinculin

Fig. 4D

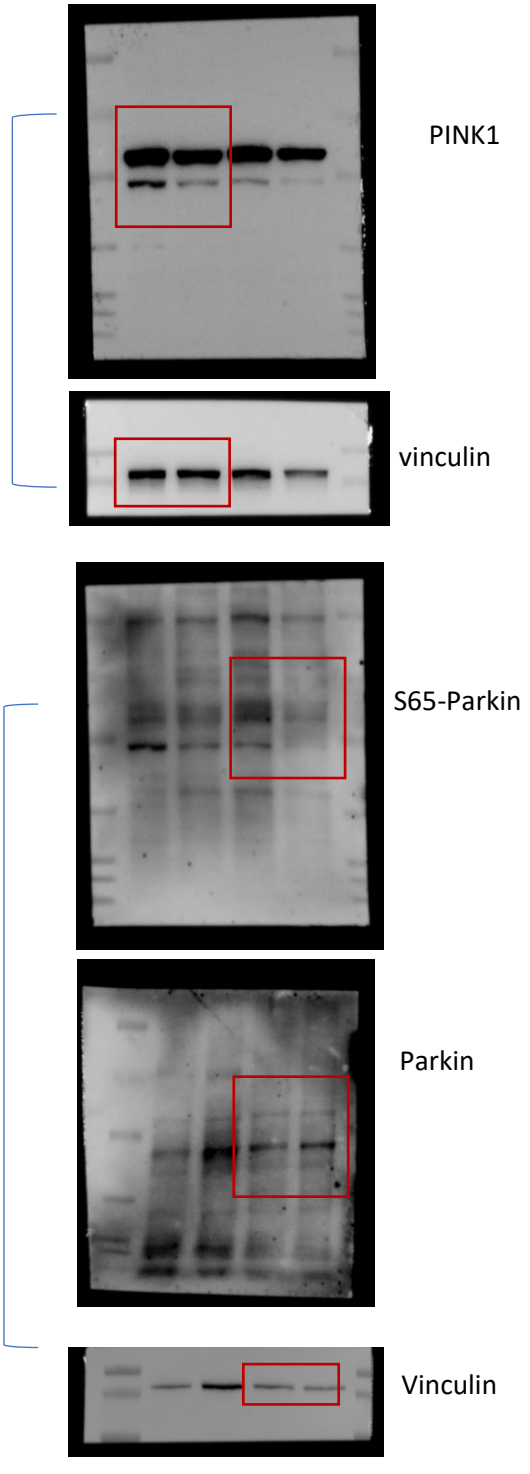

PINK1
vinculin
S65-Parkin
Parkin
Vinculin

Fig. 4E

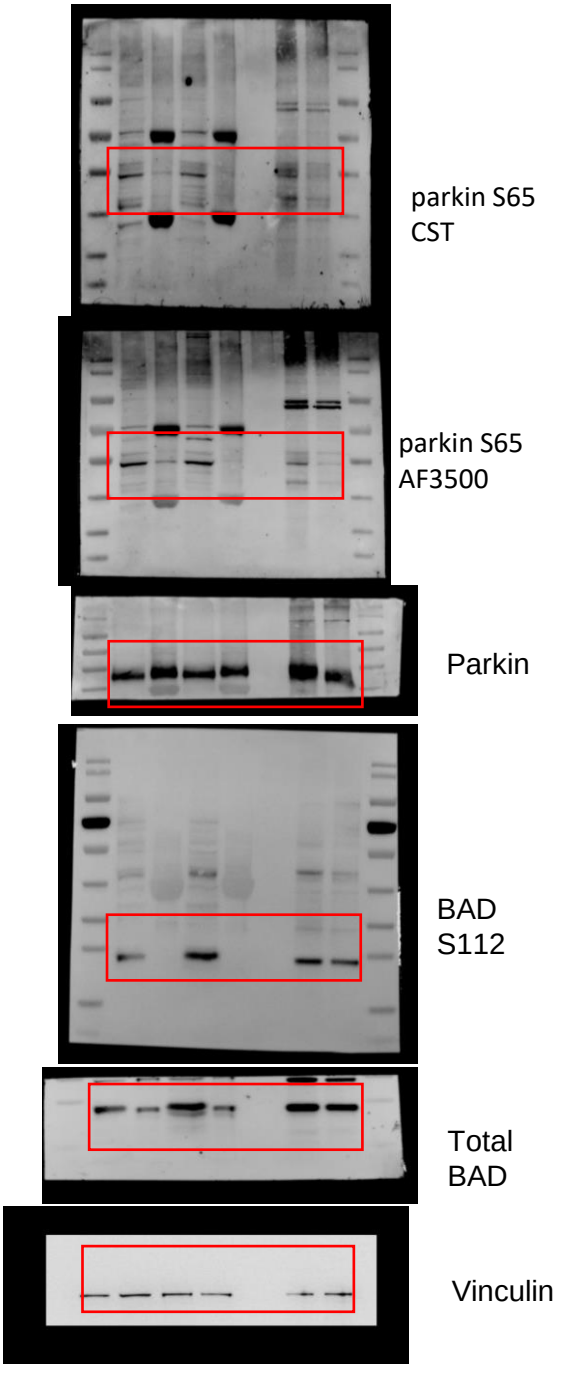


Figure 4F

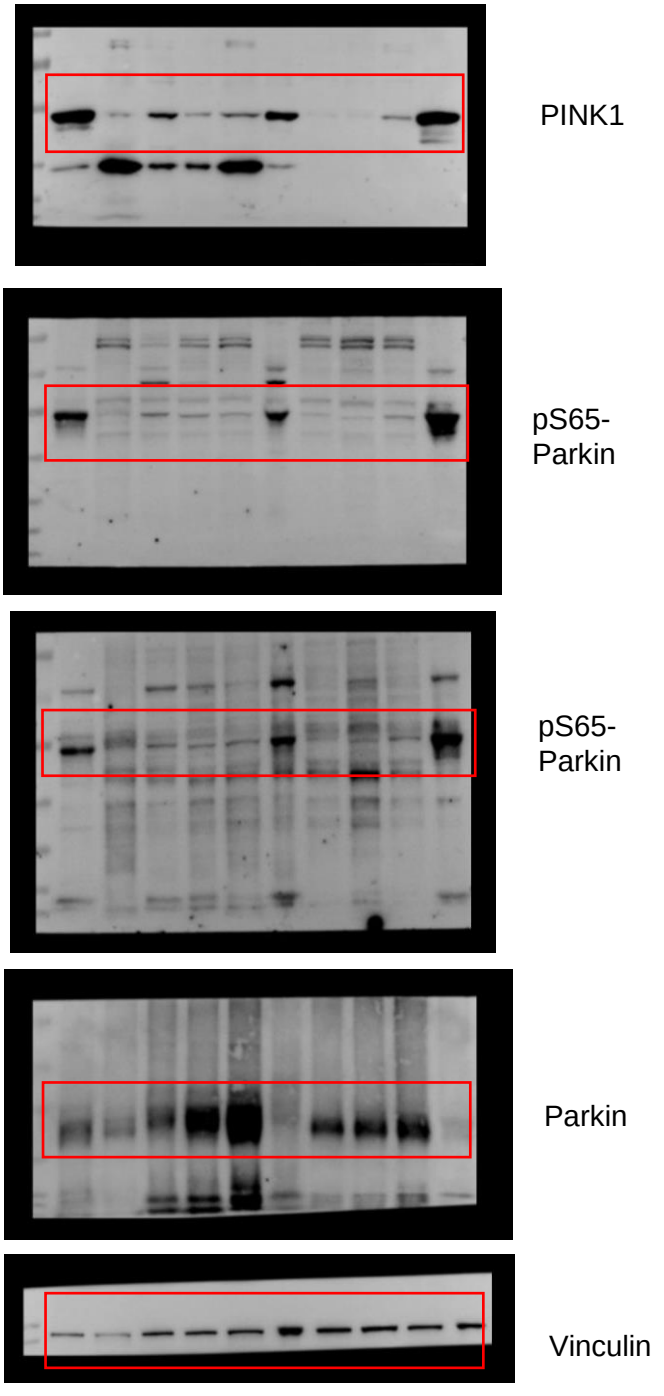
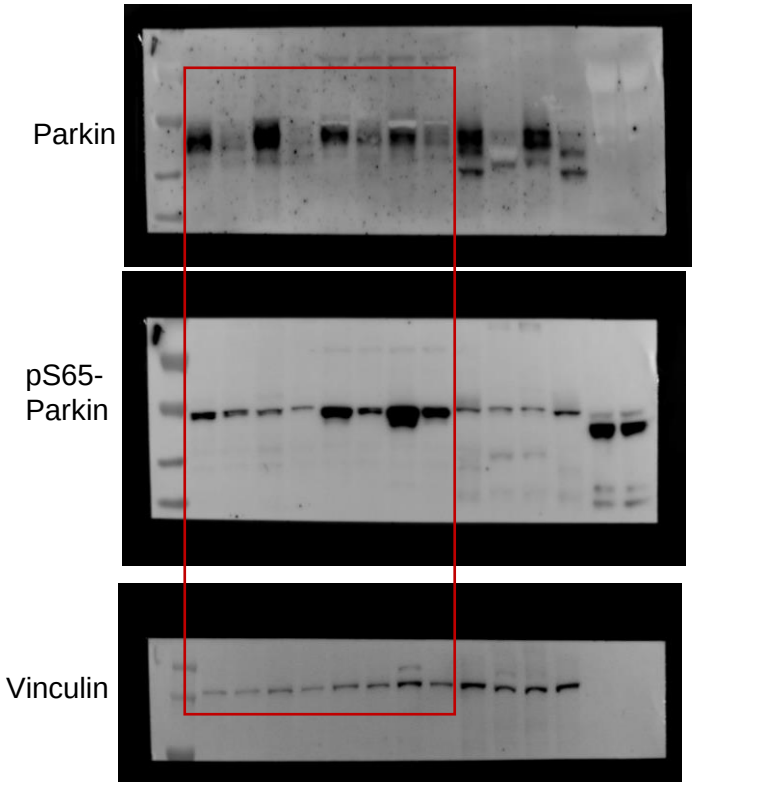


Fig 4G


Parkin
pS65-
Parkin
Vinculin

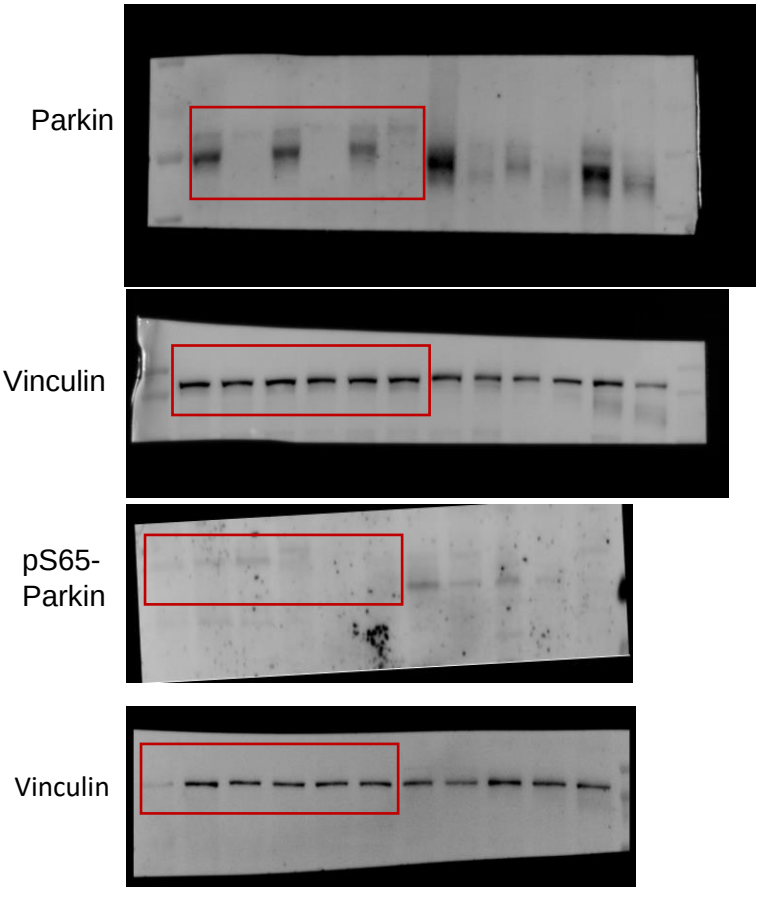
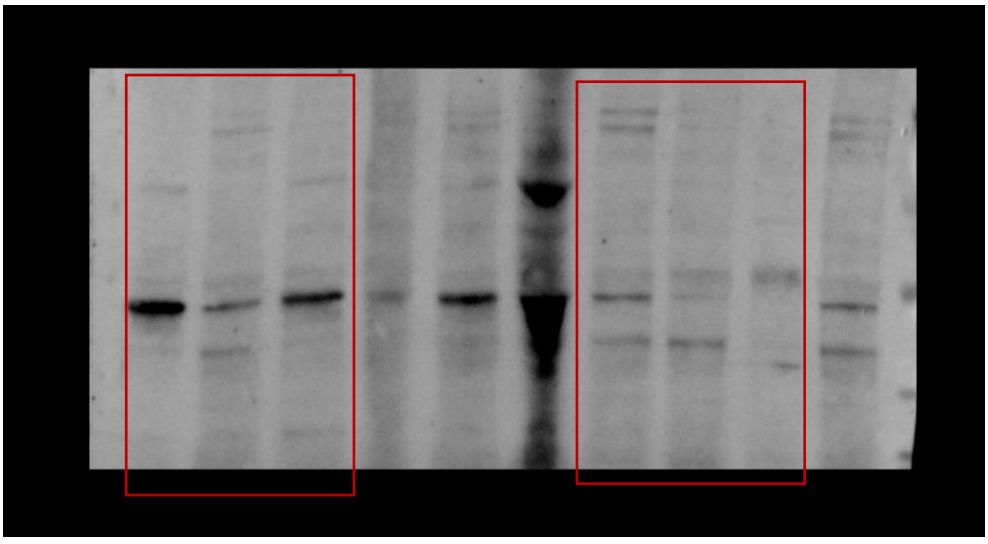

Parkin
Vinculin
pS65-
Parkin
Vinculin

Fig. 5C



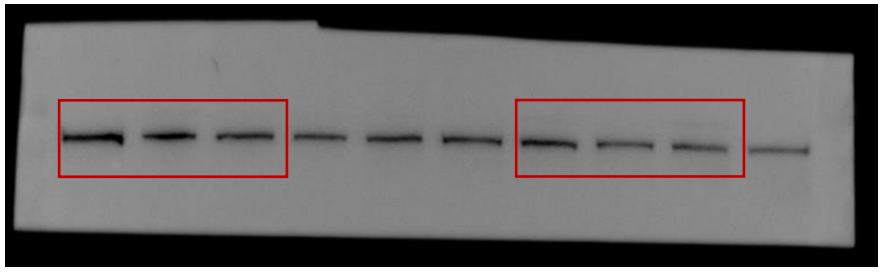


Fig 5D

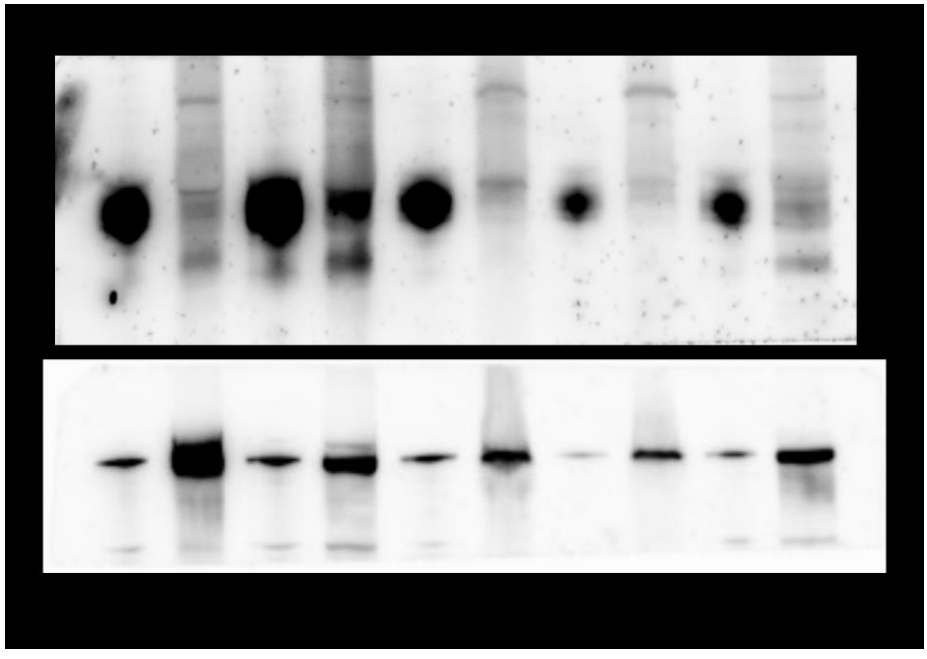
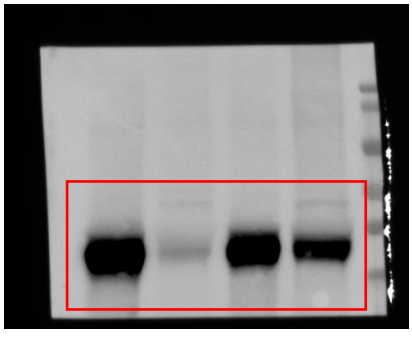
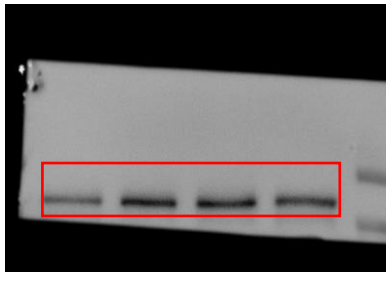


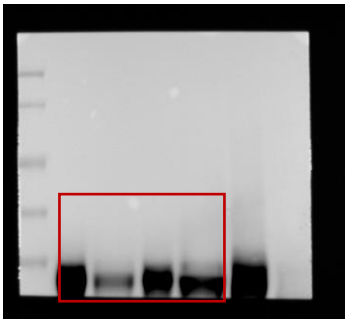
Fig. 5E



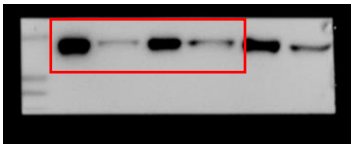
Parkin



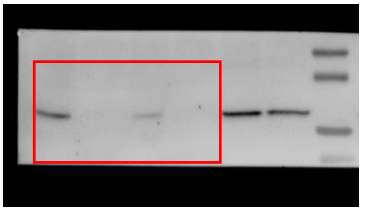
Vinculin



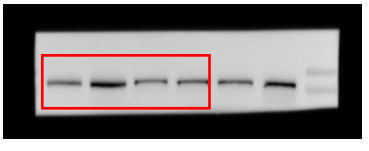
Parkin



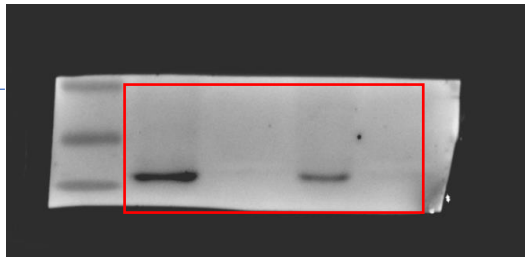
GADPH



a-syn



Vinculin



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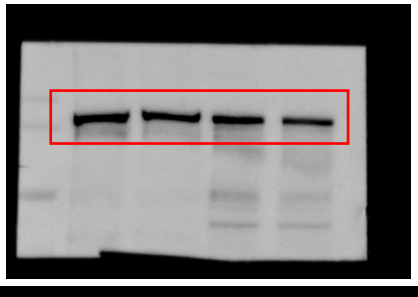

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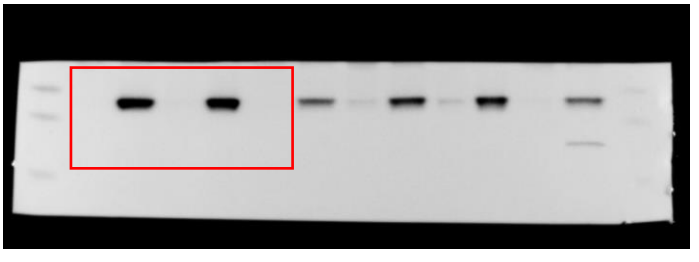
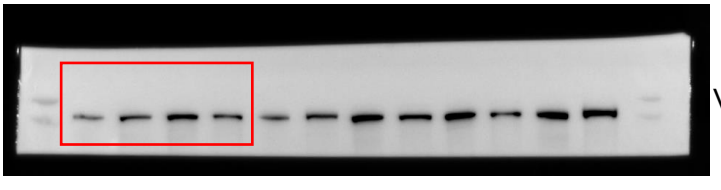
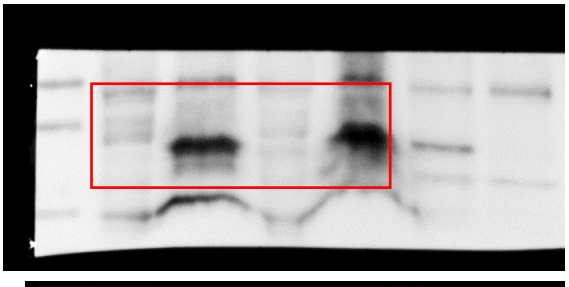


S129-a-syn



Vinculin

Vinculin (not included in main figure because of space limitations and the presence of other similar loading control)



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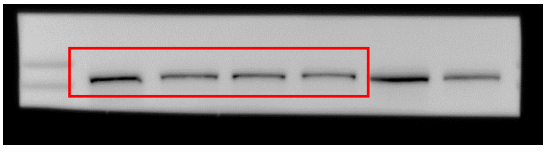


Vinculin (not included in main figure because of space limitations and the presence of other similar loading control)

Fig. 6A

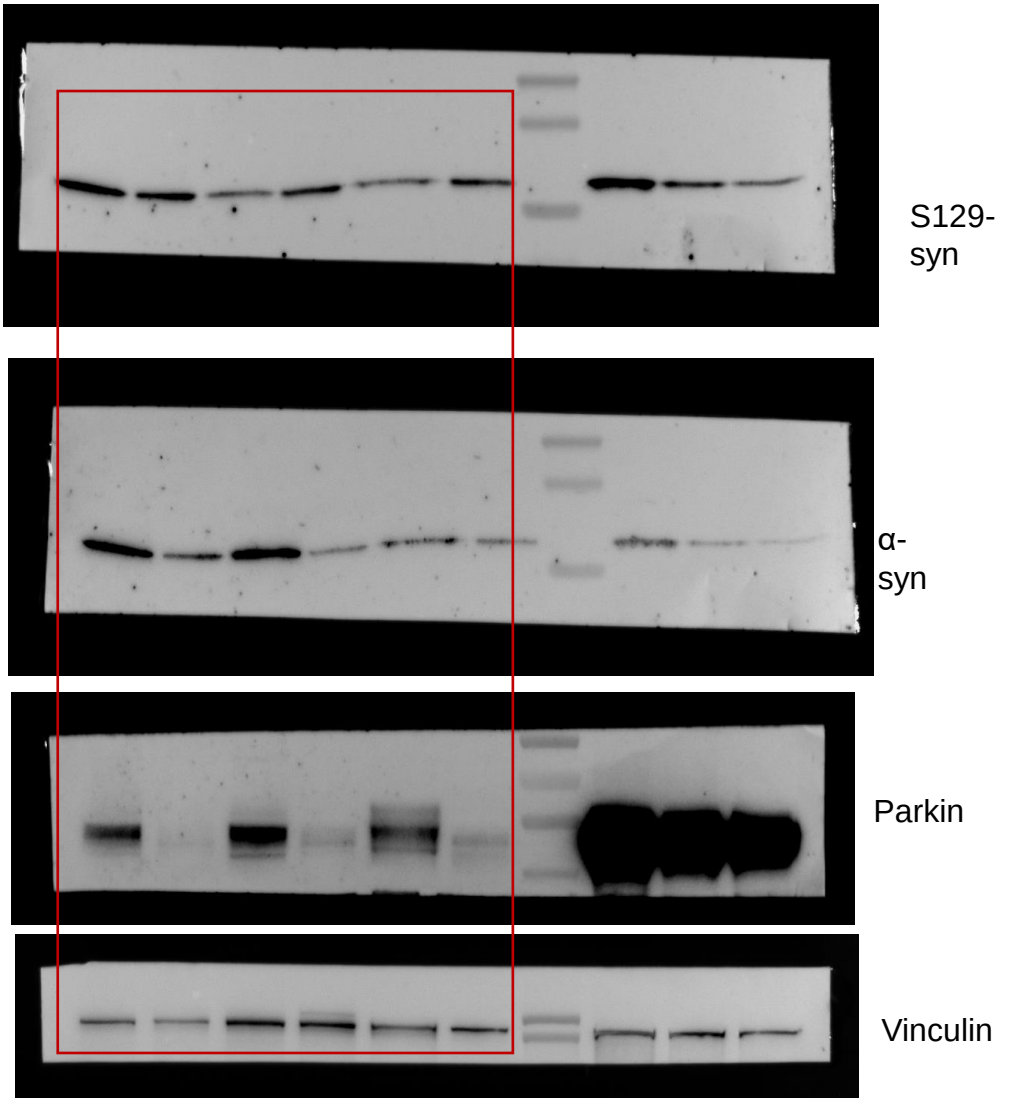

S129-syn
α-syn
Parkin
Vinculin

Fig. 6B

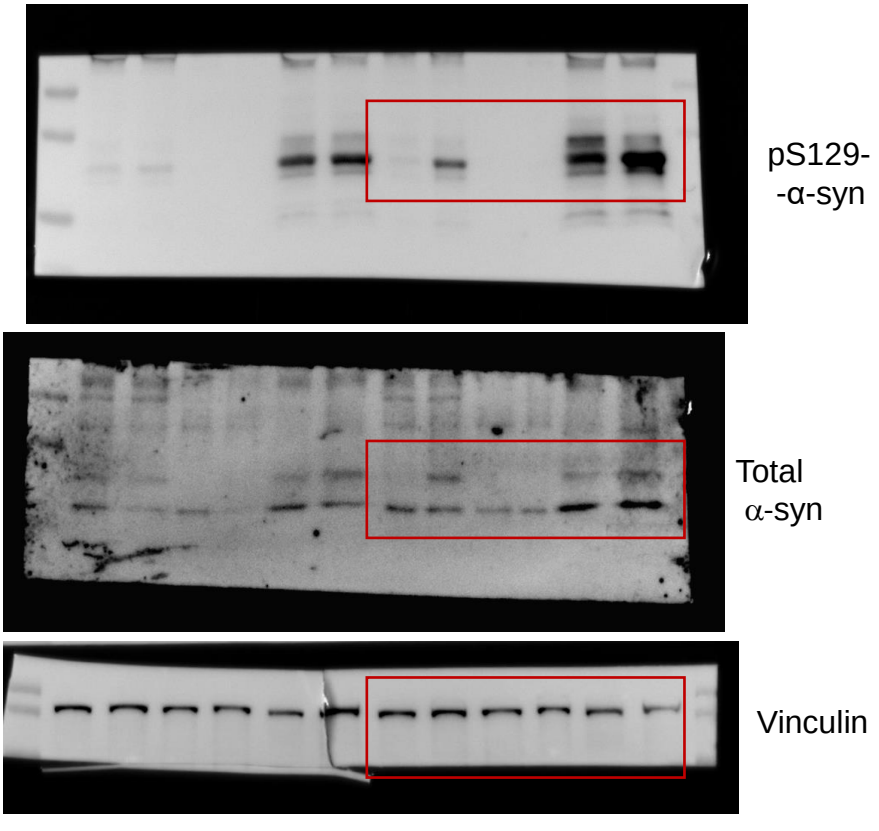

pS129--α-syn
Total α-syn
Vinculin

Fig. 7D

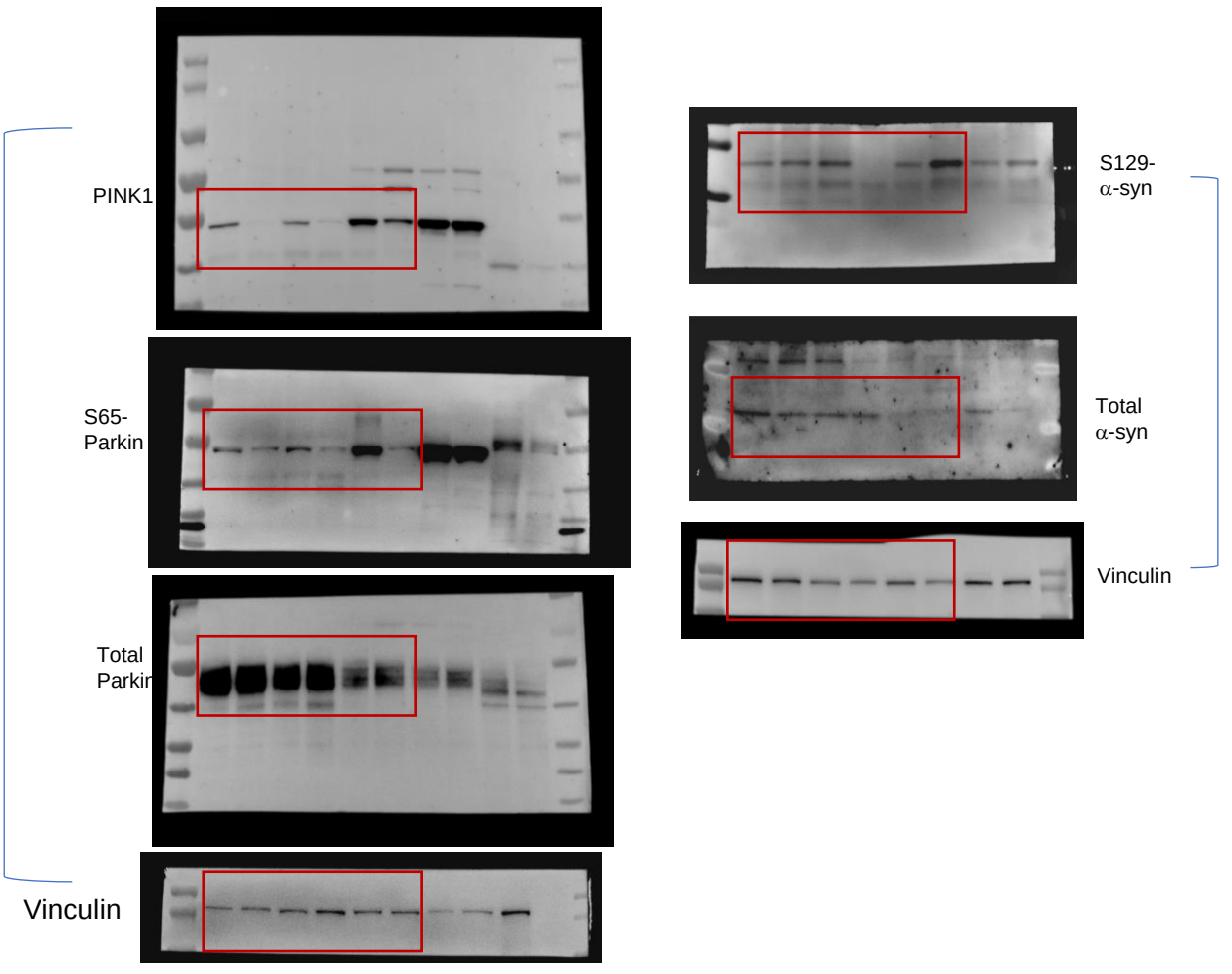

PINK1
S65-
Parkin
Total
Parkin
Vinculin
S129-
α-syn
Total
α-syn
Vinculin

Fig. 8B

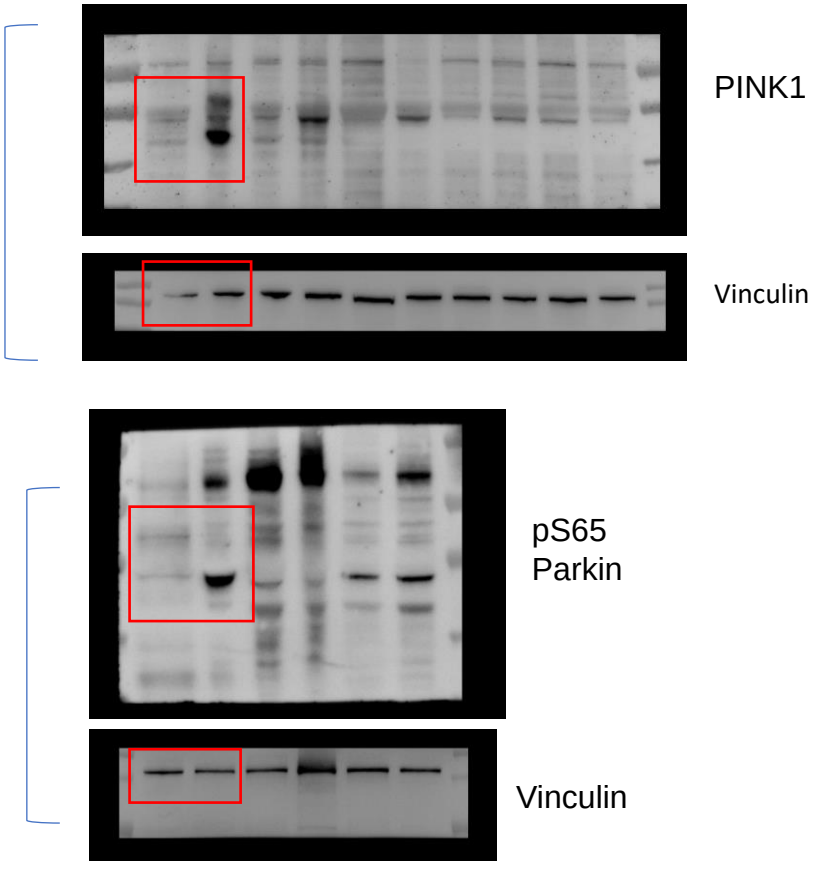
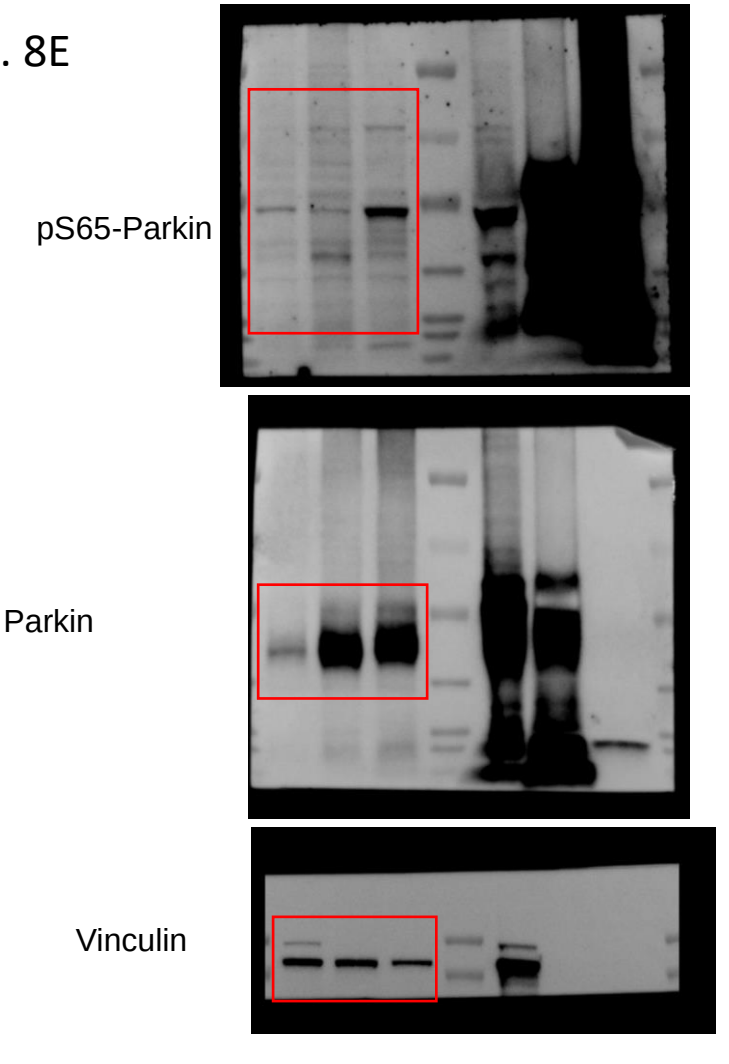
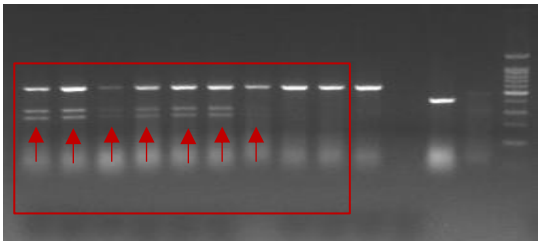
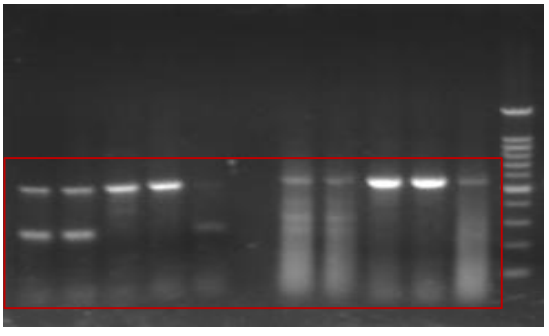

PINK1
Vinculin
pS65
Parkin
Vinculin

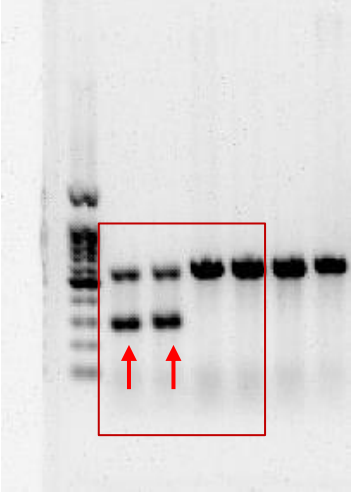
Fig. 8E

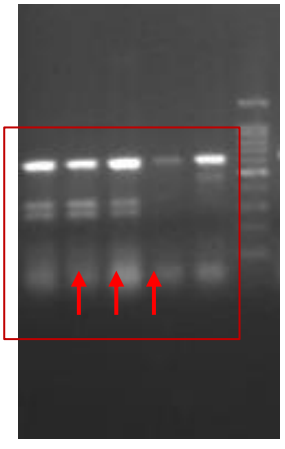

pS65-Parkin
Parkin
Vinculin

Supplemental Figure 1

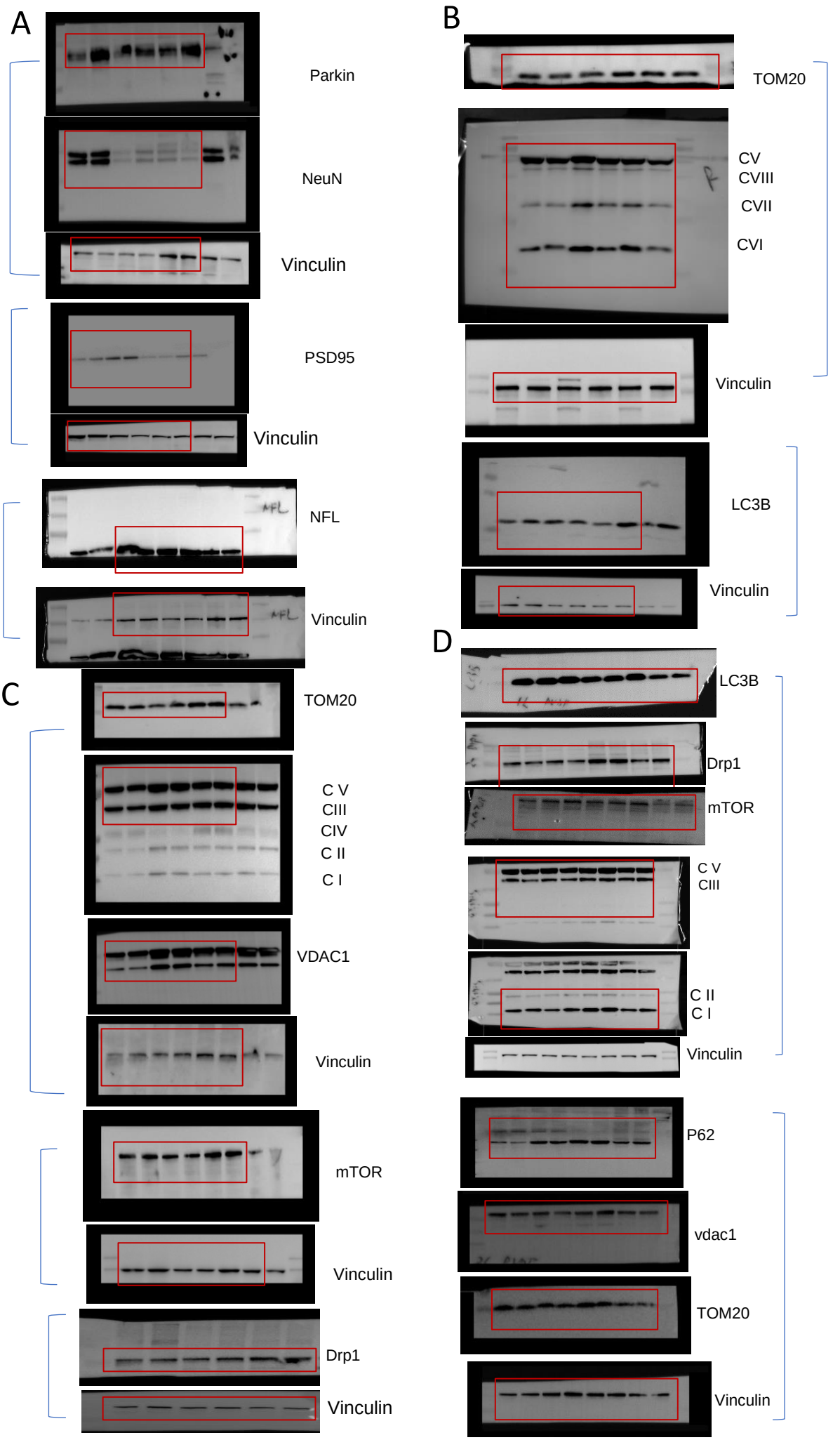




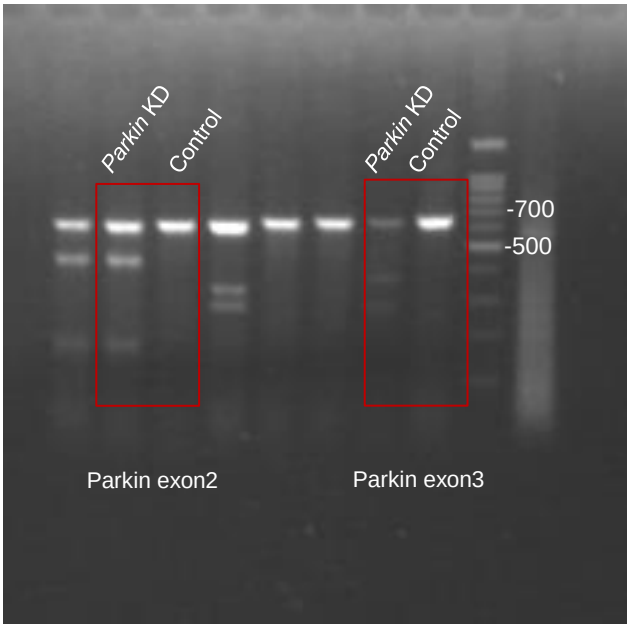




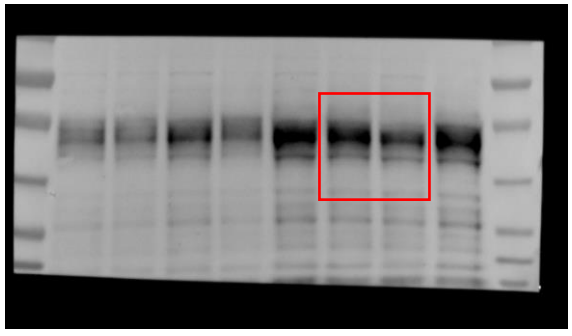
Sup Fig 3


A
Parkin
NeuN
Vinculin
PSD95
Vinculin
NFL
Vinculin
B
TOM20
CV
CVIII
CVII
CVI
Vinculin
LC3B
Vinculin
C
TOM20
C V
CIII
CIV
C II
C I
VDAC1
Vinculin
mTOR
Vinculin
Drp1
Vinculin
D
LC3B
Drp1
mTOR
C V
CIII
C II
C I
Vinculin
P62
vdac1
TOM20
Vinculin

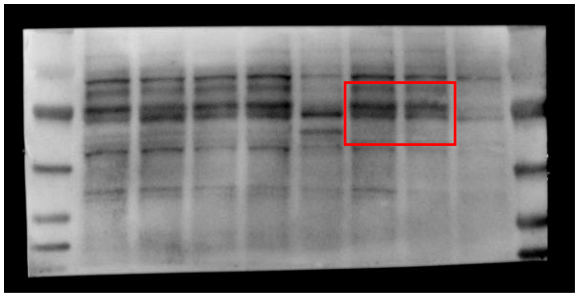
Sup Fig 5B


Parkin KD
Control
Parkin KD
Control
-700
-500
Parkin exon2
Parkin exon3

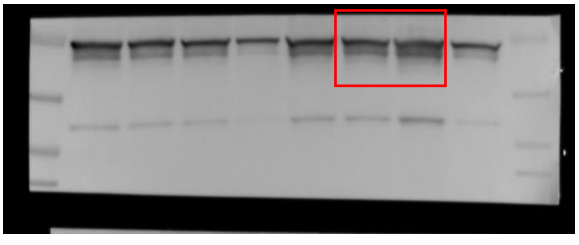
Suppl Fig 7A



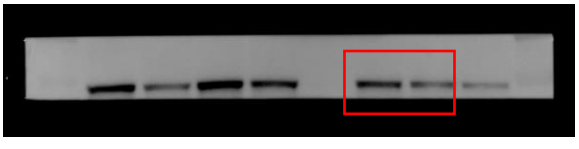
Parkin



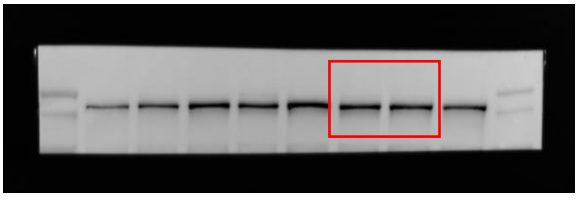
NeuN



GFAP



TH



Vinculin