Supplementary Table 1. Human post mortem brain samples.

Case	Diagnosis	Age	PMD
Control 1	-	83	5
Control 2	-	92	19
Control 3	-	79	10
Control 4	-	93	13
Control 5	-	81	20
Patient 1	PD, Limbic LB	81	8.75
Patient 2	PD, Neocortical LB	80	19
Patient 3	PD	84	17.5
Patient 4	PD, Limbic LB	83	14
Patient 5	PD, DLB	77	5
Patient 6	PD, Neocortical LB	84	13
Patient 7	PD	88	19.5
Patient 8	PD	73	6
Patient 9	PD with dementia, Neocortical LBD	84	5

Table S1. Diagnosis, post mortem delay (PMD; hours) and age (years) of subjects that were used in this study. PD – Parkinson's disease; LB – Lewy body; DLB – Diffuse Lewy body; LBD – Lewy body disease.

Supplemental Figure 1. (**a**) Schematic representation of the parkin GST-fusion proteins. Ubiquitin like (UBL), unique parkin (UPD), RING1, IBR, RING2 domains and tyrosines (Y) are indicated. The position of Y143 is located in between the UBL and UPD region and is represented by an arrow in the figure. (**b**) Schematic representation of the c-Abl GST-fusion proteins. SH3, SH2, tyrosine kinas (TK), DNA-binding and actin domains are indicated. (**c**) Schematic representation of myc-tagged deletion mutants of parkin. The position of Y143 is located in between the UBL and UPD region and is represented by an arrow in the figure. (**d**) Schematic representation of c-Abl truncations.

Supplemental Figure 2. Primary midbrain neuronal cultures grown on polylysine-coated chambered slides were exposed to 100 nM MPP+ for 24 h in the presence or absence of STI-571 (2.5 µM for 6h prior to MPP+ treatment). Cells were fixed and stained with anti-TH antibodies. The micrograph is representative of 3 independent experiments. The densitometric analysis represents mean ± SEM from these experiments. *p<0.05 for difference from Control group. **p<0.05 for difference from MPTP group.

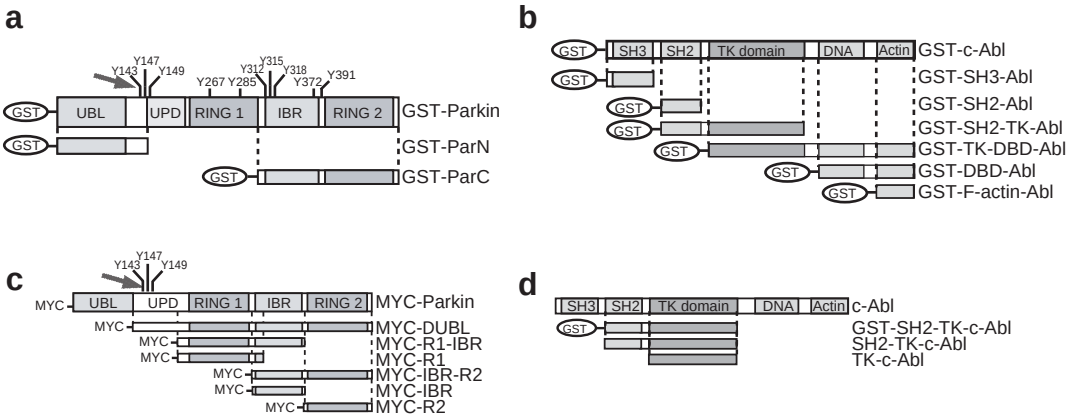
Supplemental Figure 3. Primary midbrain neuronal cultures and astrocytes were exposed to 100 nM MPP+ for 24 h. Whole cell lystaes 1) 20 µg neuronal lysate; 2) 10 µg neuronal lysate; 3) 5µg neuronal lysate; and 4) 20 µg astrocyte lysate were immunoblotted either with anti-GFAP or anti-*p*-Abl antibodies.

List of Antibodies and Recombinant Proteins:

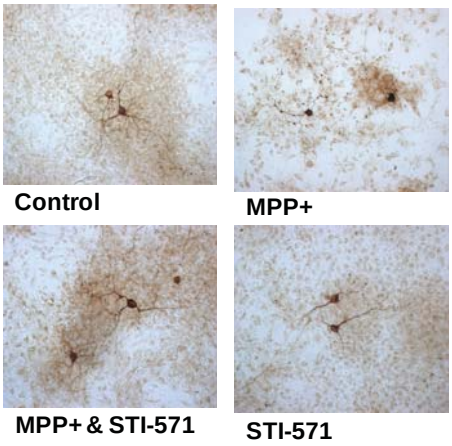
Anti-pTyr, Anti-pAbl; Anti-c-Abl, Anti-Parkin were purchased from Cell Siganling Technologies.

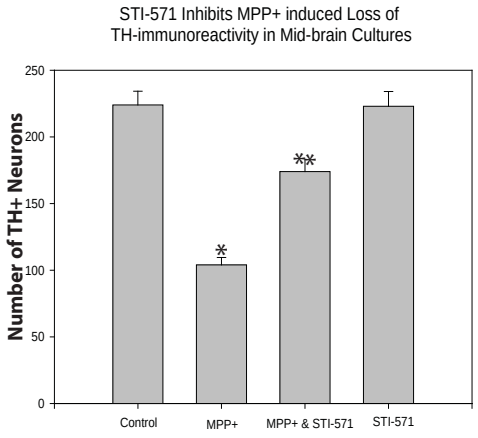
Anti-GST; Anti-FLAG; Anti-HA, Anti-Myc were purchased from Sigma.

Recombinant His-Abl was purchased from Upstate technologies.

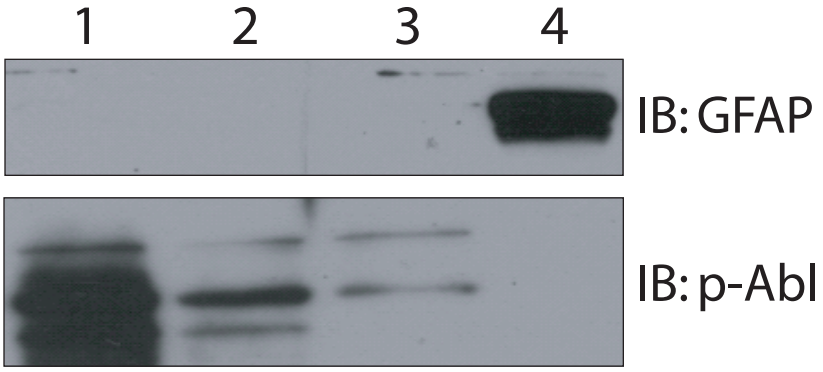


Supplemental Fig. 1





Supplemental Fig. 2



Supplemental Fig. 3