

## SUPPLEMENTAL INFORMATION

### **Figure S1. Parkin interacts with VDR in 293T.**

Flag-VDR and HA-Parkin were expressed in HEK293T cells, and cell lysates were immunoprecipitated and analyzed by immunoblotting with the indicated antibodies (A, B).

### **Figure S2. Parkin expression downregulates VDR protein level in dose.**

HA-Parkin was transfected into CaCo2(A) and Hela(B) in dose, and cell lysates were analyzed by immunoblotting with the indicated antibodies.

### **Figure S3. VDR does not affect Parkin protein expression.**

IECs lysates from Vdr<sup>-/-</sup> and WT mice were analyzed by immunoblotting with the indicated antibodies.

### **Figure S4. Parkin does not affect VDR mRNA expression.**

(A) HC116 cells were transfected with varying amounts of HA-Parkin or empty vectors. Isolated mRNA from Cell lysates, qPCR analyzed the Vdr mRNA expression.

(B) Isolated mRNA from the WT and Parkin<sup>-/-</sup> mice colon, qPCR analyzed the Vdr mRNA expression.

### **Figure S5. Parkin downregulating VDR is independent of ubiquitin.**

(A) Myc-Parkin WT, Myc-Parkin S65A, Myc-Parkin T173A, and Myc-Parkin C431A were transfected in HCT116 cells as indicated and analyzed by immunoblotting with the indicated antibodies.

(B) Flag-VDR, and Myc-Parkin were co-transfected with HA-ubiK48 or HA-ubiK48 in HCT116 cells as indicated and IP with HA, then analyzed by immunoblotting with the indicated antibodies.

Figure.S1

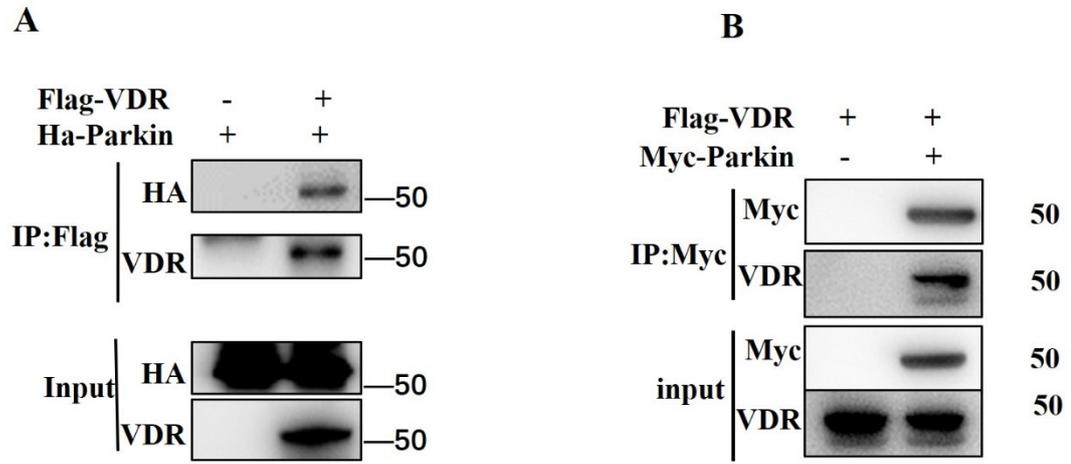


Figure.S2

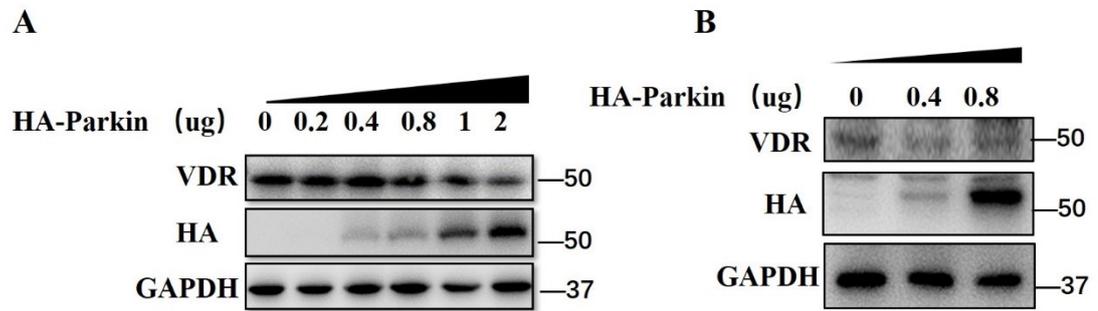


Figure.S3

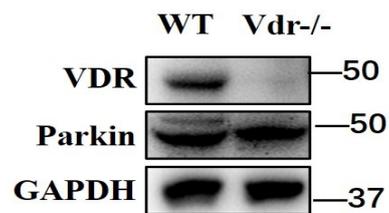


Figure.S4

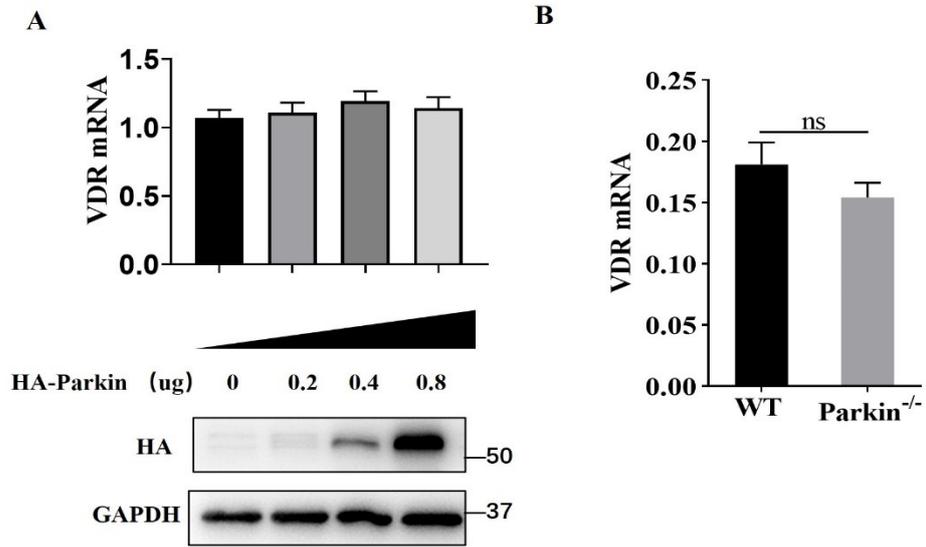


Figure.S5

