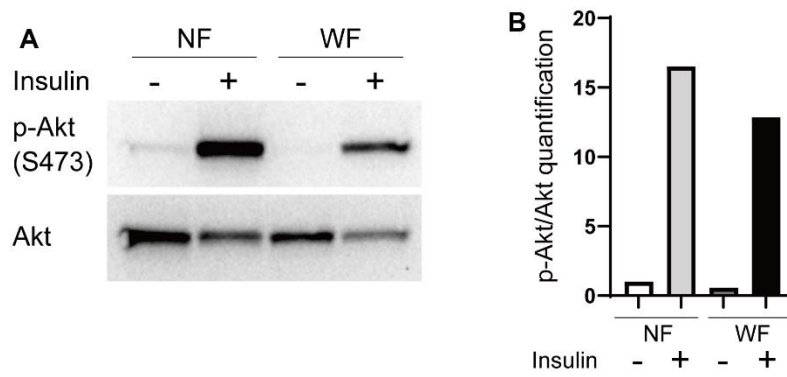
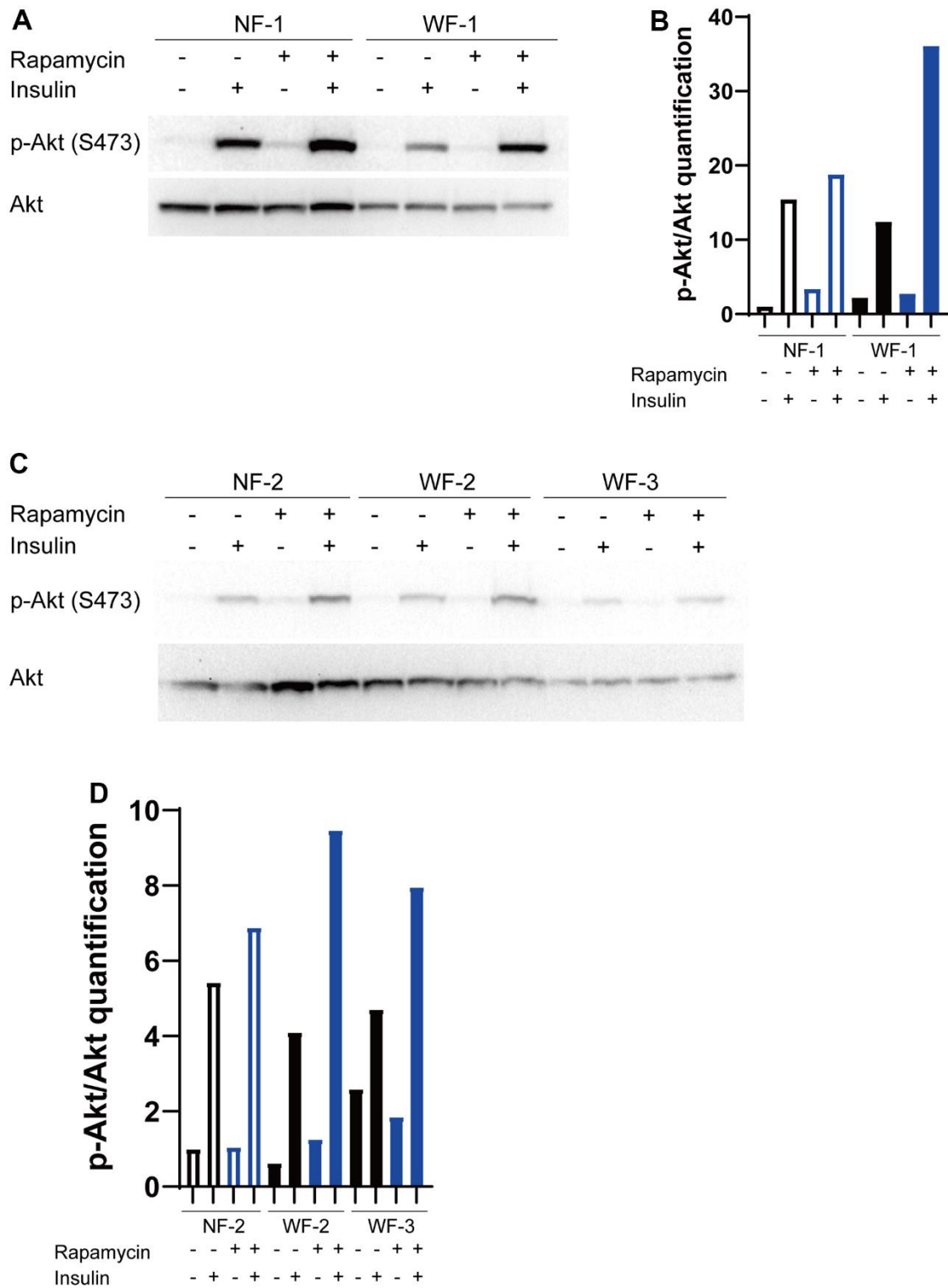


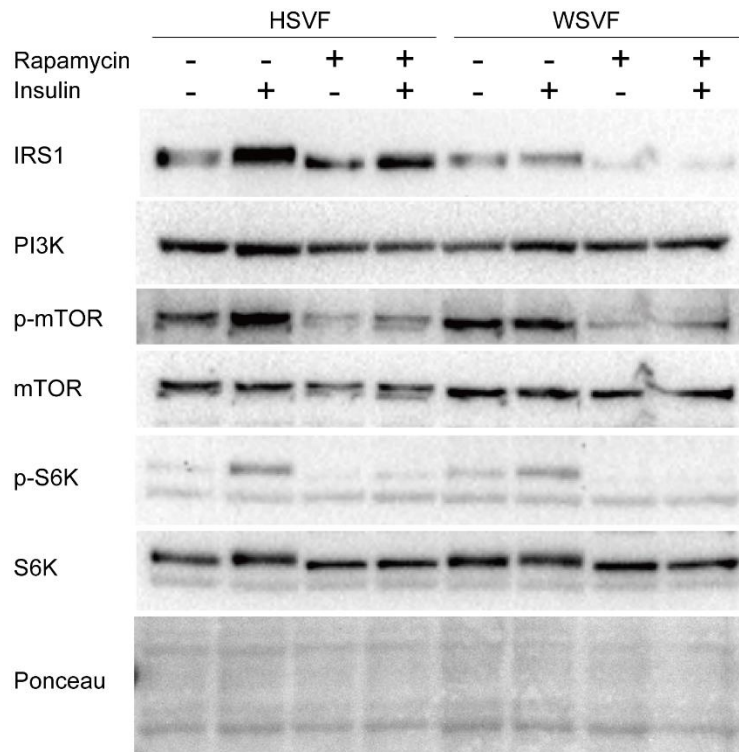
## SUPPLEMENTARY FIGURES



**Supplementary Figure 1. Insulin signaling is decreased in WF.** (A) Western blotting of p-Akt (S473) and Akt in NF and WF. (B) Quantitative analysis of p-Akt/Akt. NF: fibroblasts from a normal individual; WF: fibroblasts from a patient with WS; WS: Werner syndrome.



**Supplementary Figure 2. Rapamycin alleviates decreased insulin signaling in WF.** (A) Western blotting of p-Akt (S473) and Akt in NF-1 and WF-1 treated with rapamycin. (B) Quantitative analysis of p-Akt/Akt in NF-1 and WF-1. (C) Western blotting of p-Akt (S473) and Akt in NF-2, WF-2, and WF-3 treated with rapamycin. (D) Quantitative analysis of p-Akt/Akt in NF-2, WF-2, and WF-3. NF: fibroblasts from a normal individual; WF: fibroblasts from a patient with WS; WS: Werner syndrome.



**Supplementary Figure 3. Western blotting of IRS1, PI3K, p-mTOR, mTOR, p-S6K, and S6K for HSVF and WSVF.** WS: Werner syndrome; SVF: stromal vascular fraction; HSVF: SVF derived from a healthy patient; WSVF: SVF derived from a patient with WS.