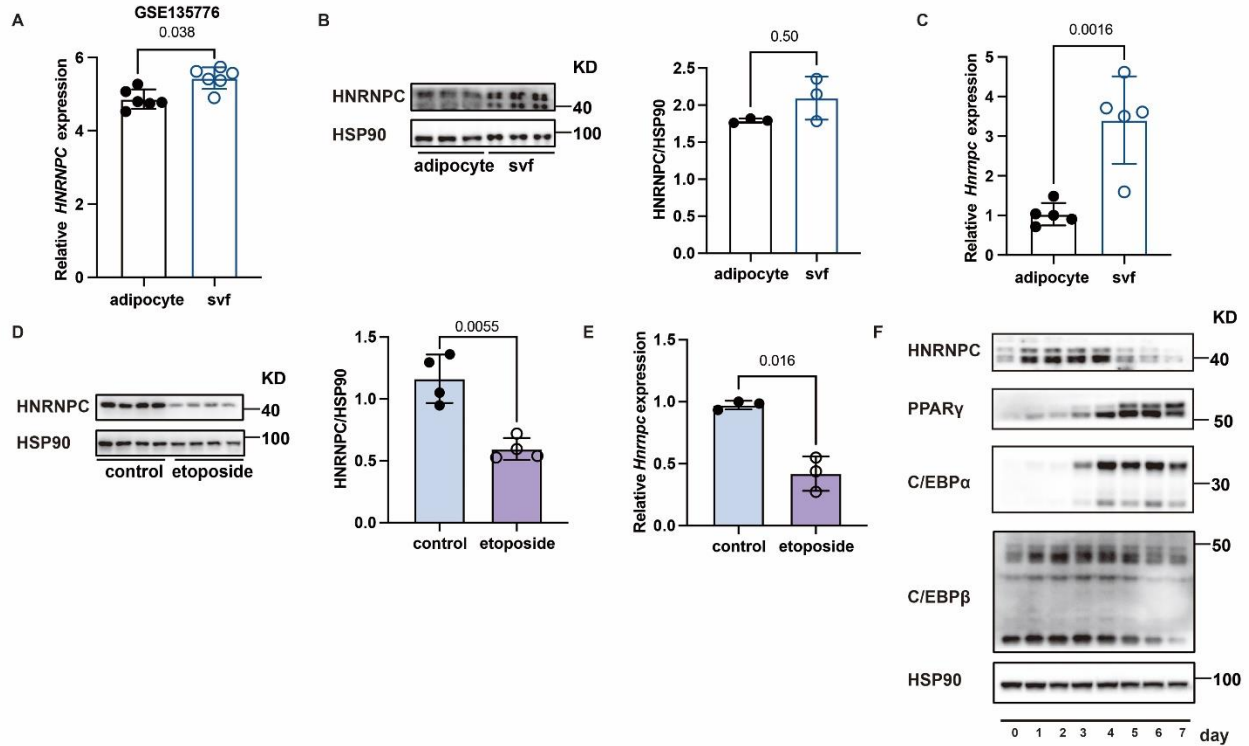


## SUPPLEMENTARY DATA

# **m<sup>6</sup>A Reader HNRNPC Facilitates Adipogenesis by Regulating Cytoskeletal Remodeling through Enhanced *Lcp1* mRNA Stability**

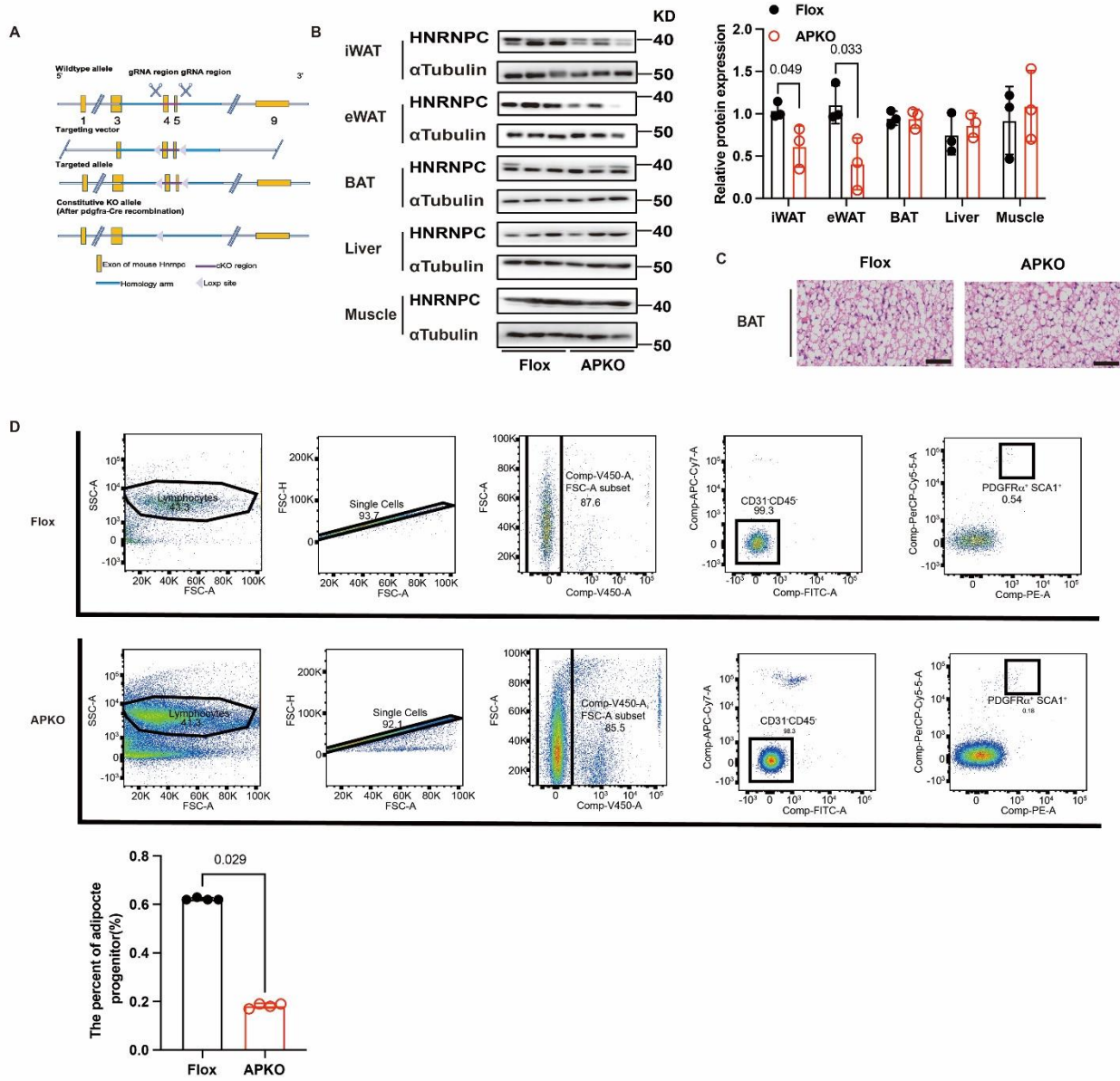
**Wenhua Xie, Yewei Cui, Lingzhi Yue, Ting Zhang, Chenglong Huang, Xinyu Yu, Dan Ma,  
Dongfang Liu, Rui Cheng, Xueya Zhao, Xi Li**

# SUPPLEMENTARY DATA



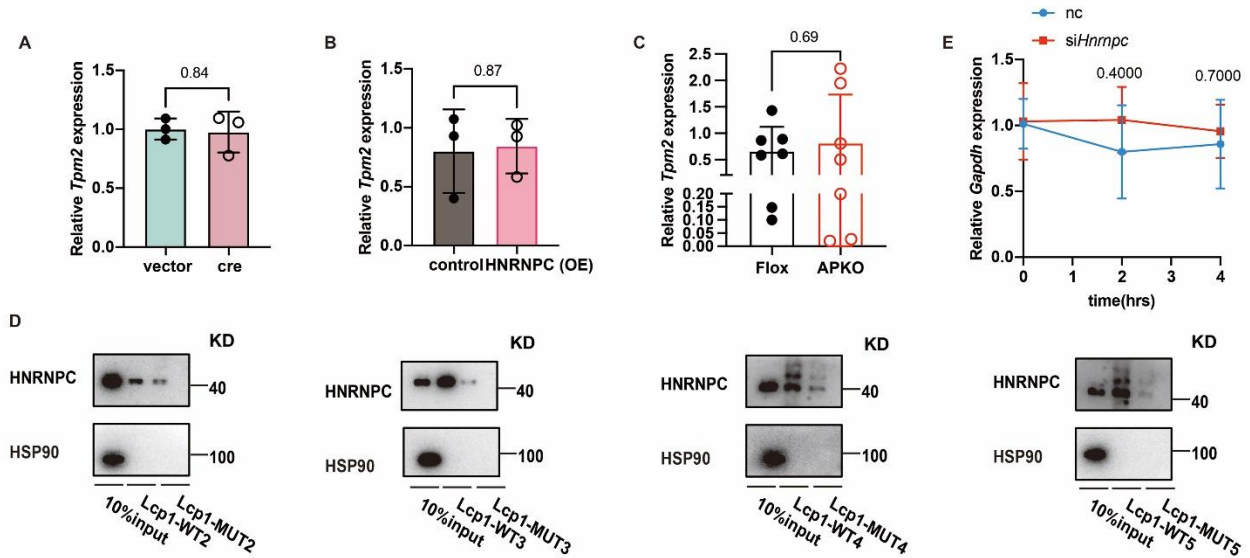
**Supplementary Figure 1. The levels of m<sup>6</sup>A regulators and HNRNPC in adipose tissues during aging.** **A.** The mRNA expression of *HNRNPC* in the adipocyte (n = 6) and SVF (n = 6) of humans in GSE135776. **B.** The protein of HNRNPC in the adipocyte (n = 3) and SVF (n = 3). **C.** The mRNA expression of *Hnrnpc* in the adipocyte (n = 5) and SVF (n = 5) of mice. **D.** Western blot analysis of HNRNPC in control (n = 4) and etoposide-treated SVF (n = 4). **E.** RT-qPCR analysis of *Hnrnpc* in control (n = 3) and etoposide-treated SVF (n = 3). **F.** Expression of C/EBP $\beta$ , C/EBP $\alpha$ , PPAR $\gamma$  and HNRNPC in 3T3-L1 cells induced differentiation into mature adipocytes at different time points. All data were shown as mean  $\pm$  SD. After performing the Shapiro-Wilk normality test to examine the normal distribution, a paired two-tailed Student's t-test or unpaired two-tailed Student's t-test with Welch's correction was utilized to assess the significance between the two groups.  $P < 0.05$  was considered statistically significant.

# SUPPLEMENTARY DATA



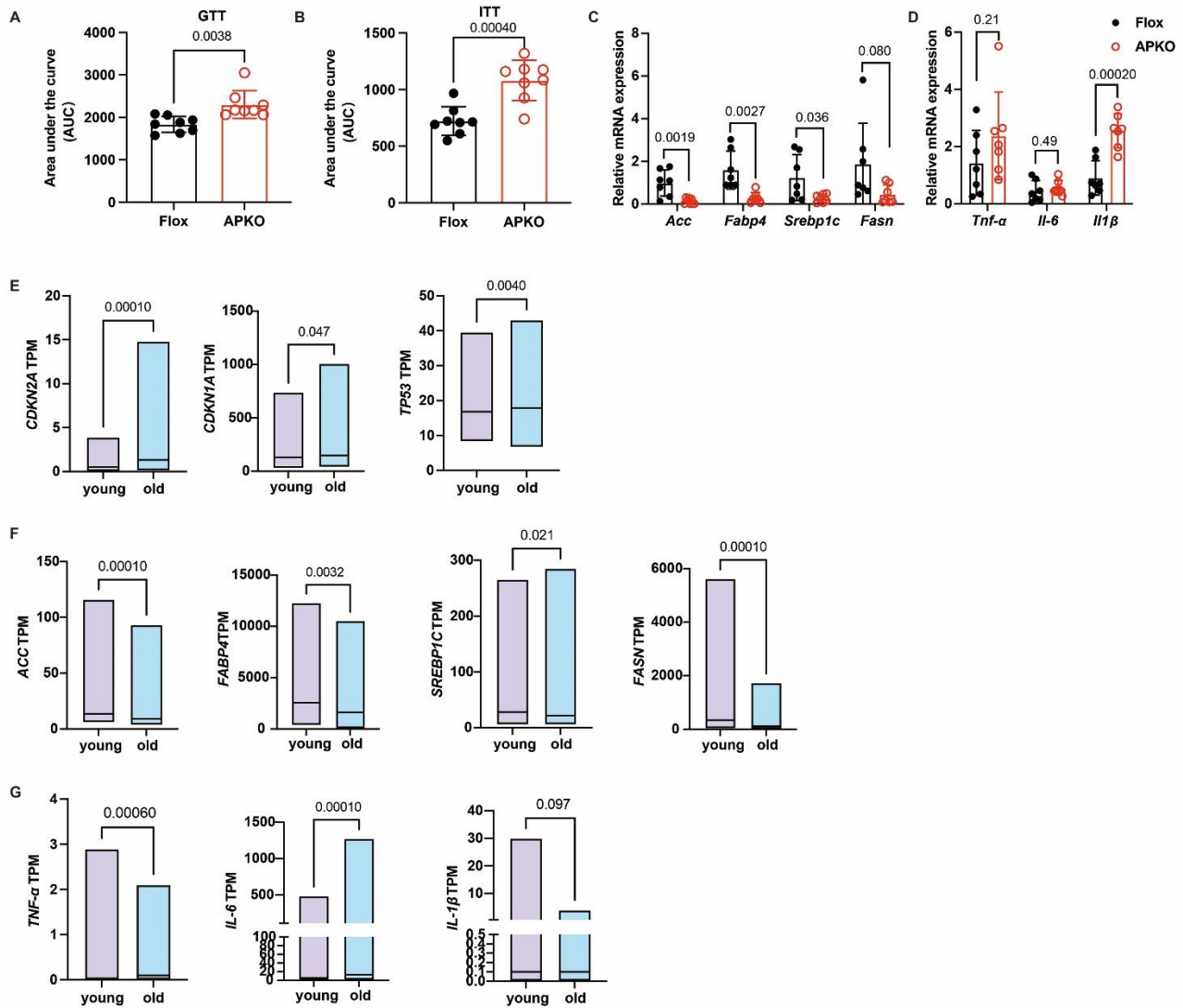
**Supplementary Figure 2. Knocking down HNRNPC inhibits adipogenesis.** **A.** The construction diagram of Flox and APKO mice. **B.** The protein expression of HNRNPC in Flox and APKO mice (iWAT (n = 3) eWAT (n = 3) BAT (n = 3) Liver (n = 3) and Muscle (n = 3)). **C.** The histological morphology of BAT in Flox (n = 4) and APKO (n = 4) mice. **D.** The percentage of adipocyte progenitor cells which were labeled CD31<sup>+</sup>CD45<sup>+</sup>Pdgfra<sup>+</sup>Sca1<sup>+</sup> antibody in Flox (n = 4) and APKO (n = 4) mice. All data were shown as mean  $\pm$  SD. After performing the Shapiro-Wilk normality test to examine the normal distribution, the unpaired, two-tailed Student's t-test with Welch's correction was utilized to assess the significance between the two groups. P < 0.05 was considered statistically significant.

# SUPPLEMENTARY DATA



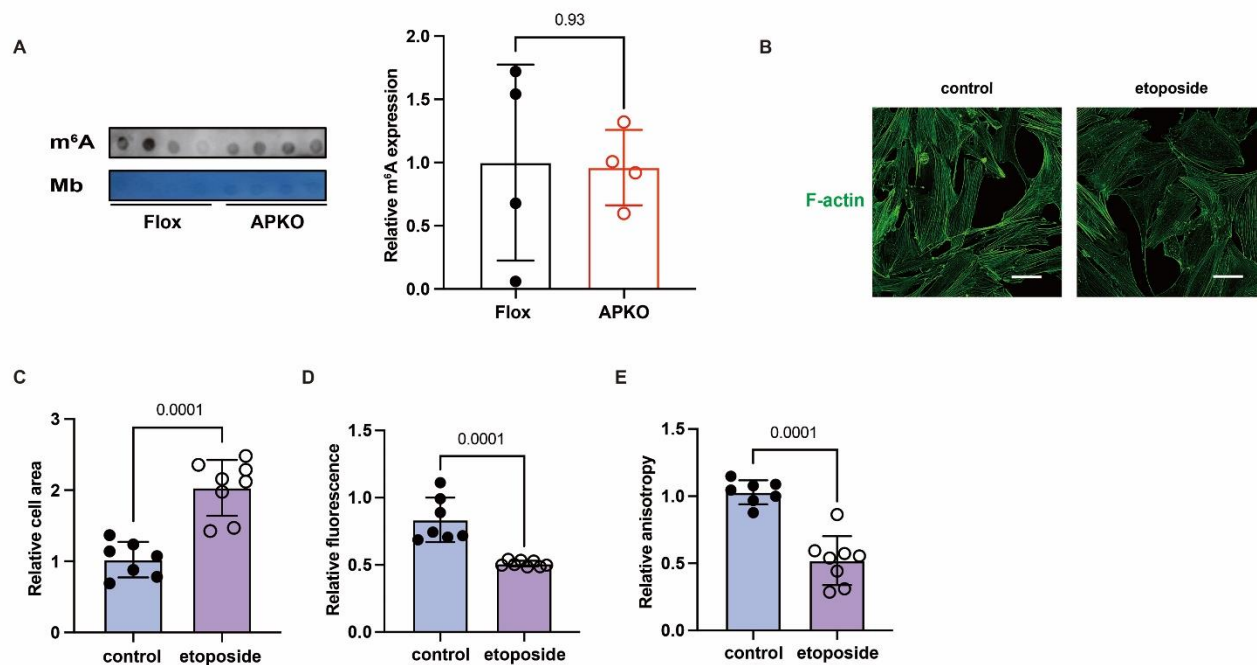
**Supplementary Figure 3. HNRNPC regulates *Lcp1* mRNA stability through binding to the m<sup>6</sup>A motif of *Lcp1*.** A-C. The mRNA expression of *Tpm2* in HNRNPC deficient and overexpression HNRNPC. D. The western blot of HNRNPC in RNA-Pull down. E. The expression of *Gapdh* in HNRNPC deficiency with actinomycin D, nc (n = 3), siHnrnpc (n = 3). All data were shown as mean ± SD. After performing the Shapiro-Wilk normality test to examine the normal distribution, an unpaired two-tailed Student's t-test or unpaired two-tailed Student's t-test with Welch's correction was utilized to assess the significance between the two groups. P < 0.05 was considered statistically significant.

# SUPPLEMENTARY DATA



**Supplementary Figure 4. The area under the curve of GTT and ITT, the aging markers in human adipose tissue. A-B.** The area under the curve (AUC) of GTT and ITT in Flox (n=8) and APKO (n=8) mice. **C-D.** RT-qPCR analysis of *Acc*, *Fabp4*, *Srebp1c*, *Fasn*, *Tnf-α*, *Il-6* and *Il-1b* in Flox (n=7) and APKO (n=7) mice. **E-G.** The expression of *CDKN2A*, *CDKN1A*, *TP53*, *ACC*, *FABP4*, *SREBP1C*, *FASN*, *TNF-α*, *IL-6* and *IL-1b* in young (n=110) and old (n=237) human subcutaneous adipose tissue. All data were shown as mean ± SD. After performing the Shapiro-Wilk normality test to examine the normal distribution, an unpaired two-tailed Student's t-test or non-parametric Mann-Whitney test was utilized to assess the significance between the two groups. P < 0.05 was considered statistically significant.

# SUPPLEMENTARY DATA



**Supplementary Figure 5. The F-actin in the aging cell.** **A.** The level of m<sup>6</sup>A modification in Flox (n = 4) and APKO (n = 4) mice. **B.** The F-actin fluorescence confocal. **C–E.** The relative cell area, the relative fluorescence, and the relative anisotropy in the control group (n = 7) and etoposide-treated group (n = 8). Scale bars, 50  $\mu$ m. All data were shown as mean  $\pm$  SD. After performing the Shapiro-Wilk normality test to examine the normal distribution, an unpaired two-tailed Student's t-test or unpaired two-tailed Student's t-test with Welch's correction was utilized to assess the significance between the two groups. P < 0.05 was considered statistically significant.