iScience, Volume *26*

Supplemental information

Histone malonylation is regulated by SIRT5 and KAT2A

Ran Zhang, Joanna Bons, Grace Scheidemantle, Xiaojing Liu, Olga Bielska, Chris Carrico, Jacob Rose, Indra Heckenbach, Morten Scheibye-Knudsen, Birgit Schilling, and Eric Verdin

Supplemental figures

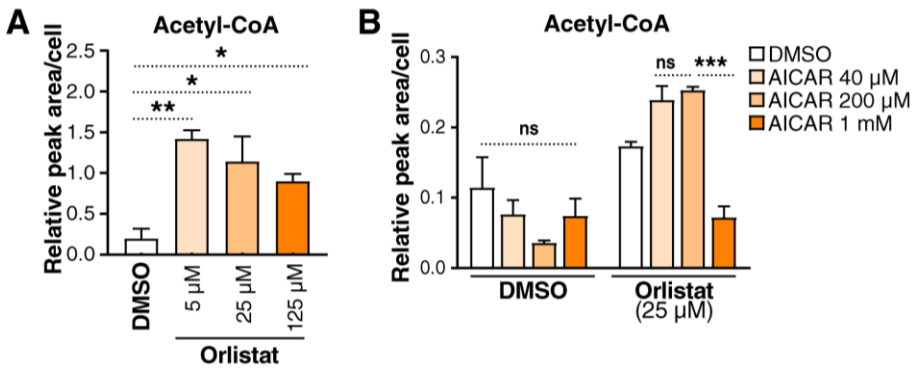

Figure S1. Acetyl-CoA measurement, Related to Figure 1.
Acetyl-CoA levels in K562 cells treated with orlistat (A) or AICAR (B) at different doses as indicated for 24 h were measured with LC-MS. Quantified levels are normalized to cell count in each sample. N = 3 per treatment. Values are shown as mean ± SEM. ns (not significant) >= 0.05, *P < 0.05, **P < 0.01, and ***P < 0.001 using unpaired student t test.

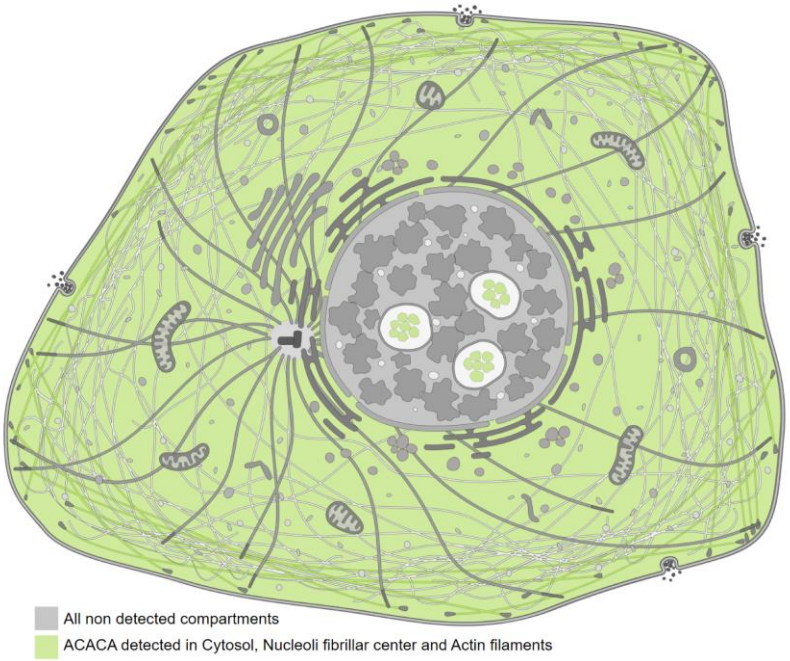

Figure S2. ACC1 subcellular localization (the HPA database, proteinatlas.org), Related to Figure 5.

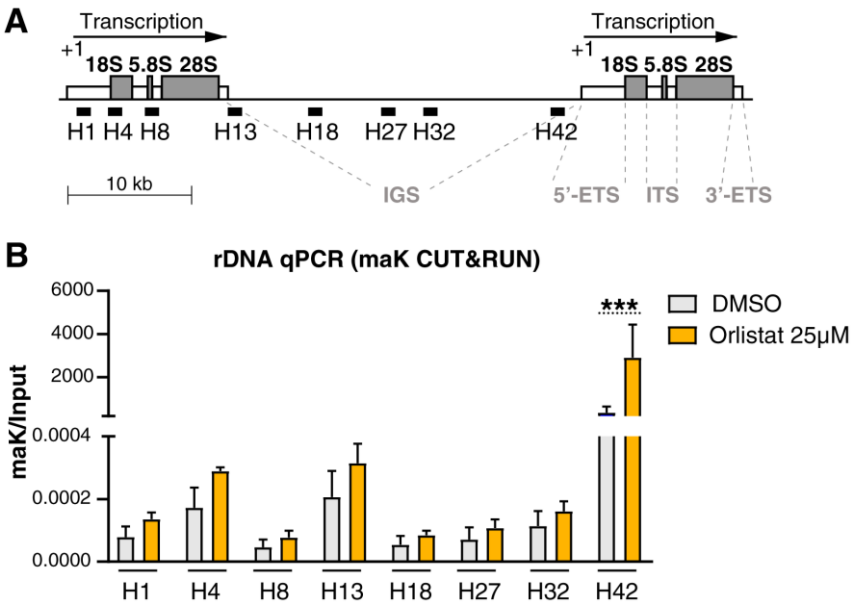

Figure S3. Lysine malonylation (maK) CUT&RUN, Related to Figure 5.

(A) Schematic representation of a human rDNA repeat with 8 primer pairs (solid bars) and their approximate positions relative to the transcription start site are indicated. IGS, intergenic spacer. 5´and 3'-ETS, 5´and 3'-external transcribed spacer. ITS, internal transcribed spacer.

(B) K562 cells treated with DMSO or 25 μM orlistat for 24 h were used for CUT&RUN of maK. The malonylation levels at 8 regions of rDNA were quantified using qPCR. 3 biological replicates per treatment. Values are shown as mean ± SEM. ***P < 0.001 using two-way ANOVA with Sidak multiple comparison.

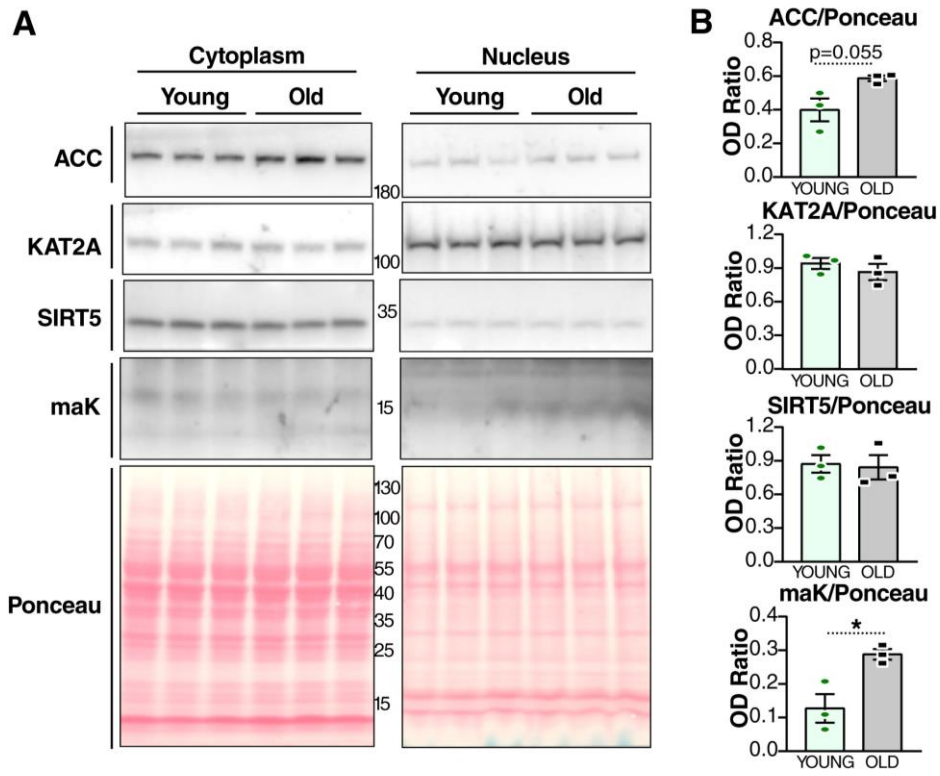

Figure S4. Western blotting of cytoplasmic and nuclear proteins, Related to Figure 6.

(A) Western blot of cytoplasmic and nuclear protein samples prepared from young (3-6 months old) and middle-aged (12-14 months old) female mouse whole brains.

(B) Quantification of the ODs of blots in the young and elder nuclear protein samples. n = 3 per group. Error bar: mean ± SEM, *p<0.05 with unpaired student t test.

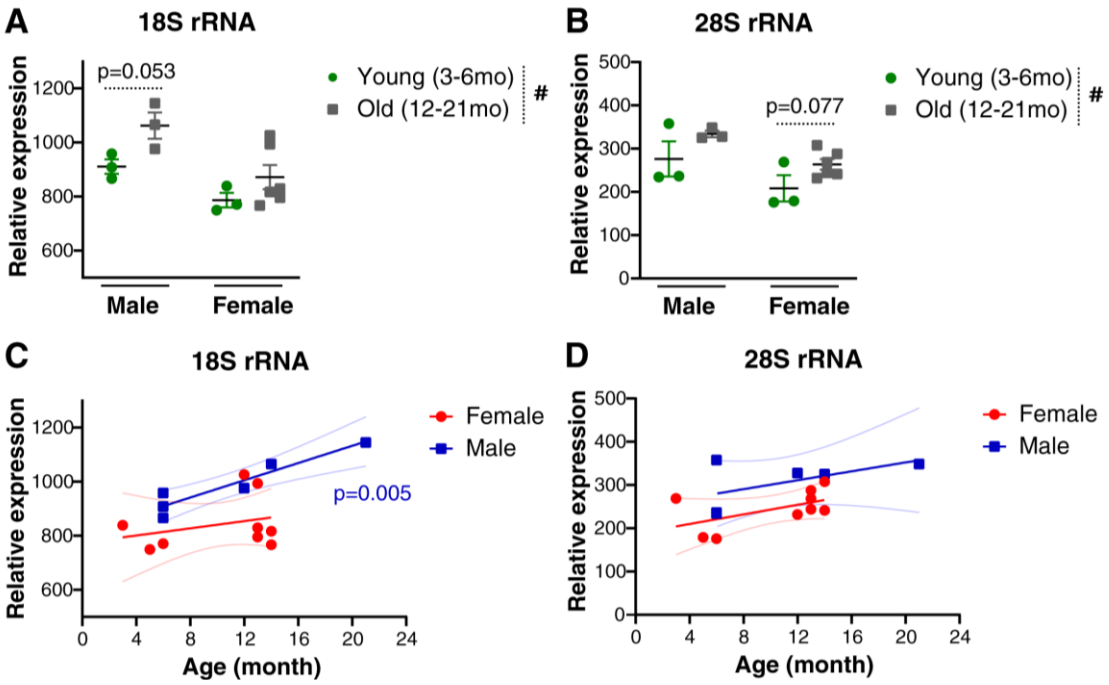

Figure S5. Ribosomal RNAs increase with age in mouse brain, Related to Figure 6.

(A and B) 18S and 28S rRNA in young (3-6 months old) and old (12-21 months old) male and female mouse brain tissues was quantified through real-time qPCR normalized to β-actin expression level. N= 3-6 per group. Error bar: mean ± SEM. P values were indicated using unpaired student t test; #p<0.05 using two-way ANOVA.

(C and D) Correlation between rRNA expression level and age of the mouse was analyzed using linear regression, with 95% confidence interval shown between light lines. Data were gender-stratified. P value was shown as indicated.