**Supplementary Figure and Figure legend**

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**Figure S1. t-SNE representation of the normalized expression of aging-related genes, *APP*, *CDKN1A*, *APOE*, *SERPINE1* and *EFEMP1*.**

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**Figure S2. UMAP representation of aging-related genes and pseudotime heatmap analysis.**

1. UMAP representation of the normalized expression of aging-related genes, *Apoe*, *Cdkn1a* (also known as P21) and *Gpx4*.
2. Pseudotime heatmap showing the clusters and pseudotime states from the state of young to old in CAECs, by Monocle2.

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**Figure S3. qRT-PCR analysis of *BACH1* mRNA levels in HUVECs transfected with *Bach1*siRNA or ConsiRNA** (n=3 independent experiments, data are mean ± SEM, unpaired 2-tailed *t*-test, \**p*<0.05, \*\**p*<0.01).