

Supplementary Table S1. Datasets used to select the Infinium CpG probes to be included in the targeted epigenetic assay.

Dataset	Group	N	Age range (mean \pm SD)
Down syndrome Infinium 450k	DS	29	10-43 years (25.62 \pm 9.27)
	DSS	29	9-52 years (29.83 \pm 10.90)
	DSM	29	42-83 years (58.97 \pm 10.41)
Long-lived individuals Infinium EPIC	Centenarians	28	101-112 (106.3 \pm 2.73)
	Centenarians' offspring	19	55-89 (71.42 \pm 9.29)
	Controls	30	55-82 (71.91 \pm 6.62)

Supplementary Table S2. Datasets used to select the Infinium CpG probes to be included in the targeted epigenetic assay.

Amplicon ID	Forward primer	Reverse primer	Genomic Localization
<i>ELOVL2</i>	AGGAAGAGAGGTAAATTTGCAGTAATACGACTCACTATA TAGGAATAGAGTTATTTTT T	GGGAGAAGGCTCCCTCTC CCACAAAACC	chr6:11,044,680-11,045,053
<i>NHLRC1</i>	TTGAGTTTAGGAGTTTTATG AGGTG	AACAAAAACAATCCTATT ATCCTCA	chr6:18,122,552-18,123,149
<i>SIRT7/MAFG</i>	GAGGGAGGTAGTAGGATACTTTAACCAAAACCAAATCT ATATGG	CTCAA	chr17:79,877,158-79,877,497
<i>AIM2</i>	AAAATTTGGTTGATTGTTGA TTTTT	CAATACAAATCTTATCTTC AAAACA	chr1:159,046,805- 159,047,299
<i>EDARADD</i>	TTTTTTGGTGATTAGGAGTT TTAGTG	CAAAATTTCAAAAAACAAA CCAAC	chr1:236,557,384- 236,557,805
<i>TFAP2E</i>	TTATTATAATTGGAGTGTAT GGAGTAGG	ACAAAAAATTAATAAAATC CAACAC	chr1:36,038,876-36,039,325