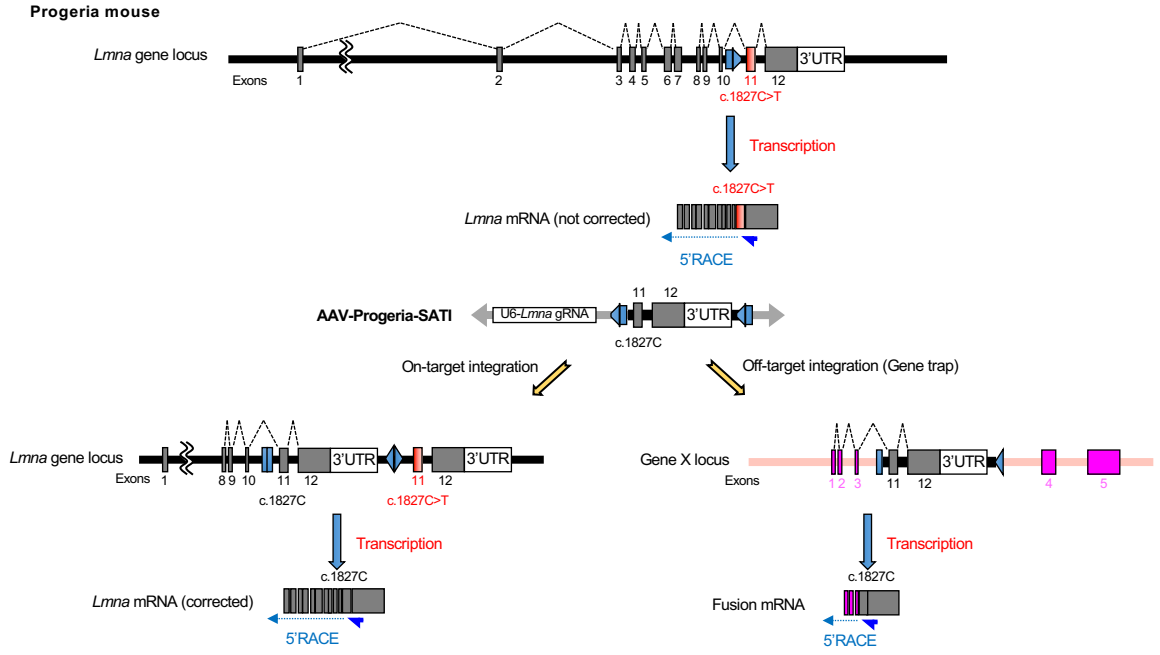
a



b

Liver (day 100)

#1

Captured exon	# of clones
Lmna exon 10 (not corrected)	57
Lmna exon 10 (corrected)	4
Alb exon 7	3
Alb exon 9	5
Alb exon 12	7
Alb exon 13	7
Trf exon 9	2
Trf exon 15	3
Igfbp1 exon 3	1
Ahsg exon 4	1
Ahsg exon 5	1
Apob exon 8	1
Apob exon 15	1
Total	93

#2

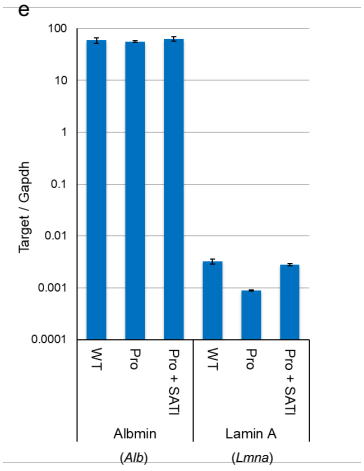
Captured exon	# of clones
Lmna exon 10 (not corrected)	28
Lmna exon 10 (corrected)	6
Alb exon 5	2
Alb exon 7	9
Alb exon 9	10
Alb exon 10	4
Alb exon 12	9
Alb exon 13	9
Alb exon 14	1
Ttr exon 3	2
Igfbp1 exon 3	1
Ahsg exon 5	1
Apob exon 9	1
Total	83

Heart (day 100)

#1

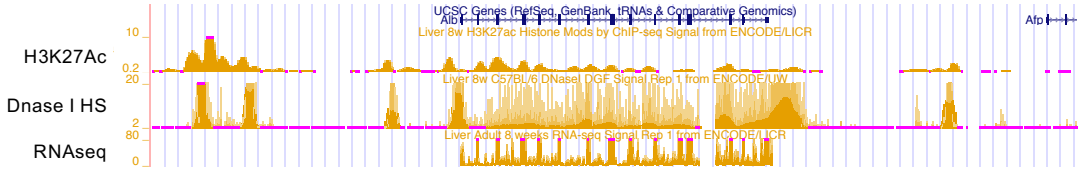
Captured exon	# of clones
Lmna exon 10 (not corrected)	84
Lmna exon 10 (corrected)	2
Myh6 exon 13	2
Myh6 exon 14	1
Myh6 exon 18	1
Myh6 exon 24	1
Atp2a2 exon 11	1
Spata5l1 exon 2	1
Total	93

e



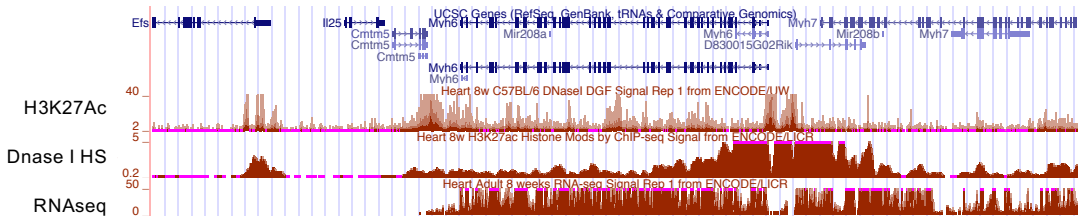
c

Alb in liver (8 week old)



d

Myh6 in heart (8 week old)



Supplementary Figure S12 | Genome-wide off-target analysis in the liver and heart of SATI-treated progeria mice at day 100. a The intronic SATI-mediated gene-targeting strategy knock-ins a "half-gene of *Lmna*" which including splicing acceptor. The off-target integration of the donor captures the transcript of the integration site and express as a fusion gene. The captured exons including from on target *Lmna* exon 10 and unknown off-target gene were determined with 5'RACE and sequencing. Blue half-arrows, PCR primers for 5'RACE. **b** The list of the captured exons in liver and heart from SATI-treated mice at day 100. The data was obtained from two mice (#1 and #2). **c** Chromatin (H3K27Ac and DNaseI HS) and expression (RNAseq) status of the major off-target gene, *Alb*, in the liver of 8-week-old mice. **d** Chromatin (H3K27Ac and DNaseI HS) and expression (RNAseq) status of the major off-target gene, *Myh6*, in the heart of 8-week-old mice. **e** RT-qPCR analysis for the expression ratio of *Albmin* to *Gapdh* (left) and *Lamin A* to *Gapdh* (right) in liver from SATI-treated mouse at day 100 ($n = 3$). Data are represented as mean ± s.e.m.