



**Supplementary Figure S2.** The subpopulation composition of BM-derived CD34<sup>+</sup> HSPC was measured at **(A)** 16 and **(B)** 72 h post transduction using the reported gating strategies. **(C)** Gating strategy to measure the cell cycle in BM-derived CD34<sup>+</sup> HSPC 48 h post transduction.

**Supplementary Table S1.** PCR reactions for ddPCR

Cycling step	Temperature (°C)	Time	Number of cycles	
Enzyme activation	95	5 min	1	ddPCR 200 or 300 nM
Denaturation	95	30 s	40	
Annealing/extension	63	1 min	40	
Signal stabilization	4	5 min	1	
	90	5 min	1	
Hold (optional)	4	Infinite	1	