

Fig. S1. Isotype controls. (A) Representative images of FACS-isolated populations from PW1^{nLacZ} mice immunostained with antibodies specific for the primary antibodies used in this study (incubation was with the secondary antibodies alone): for PW1 and SM22 α (top panel), for PW1 and MyoD (middle panel) and for MF20 (bottom panel). Scale bars: 20 μ m. (B) FACS isotype controls. For each sort, dead cells were discarded from total cells using FSC and SSC (top). For each fluorochrome, positive gates (right) were placed accordingly to its respective FMO control (left).

A

Gated on CD45-Ter119-

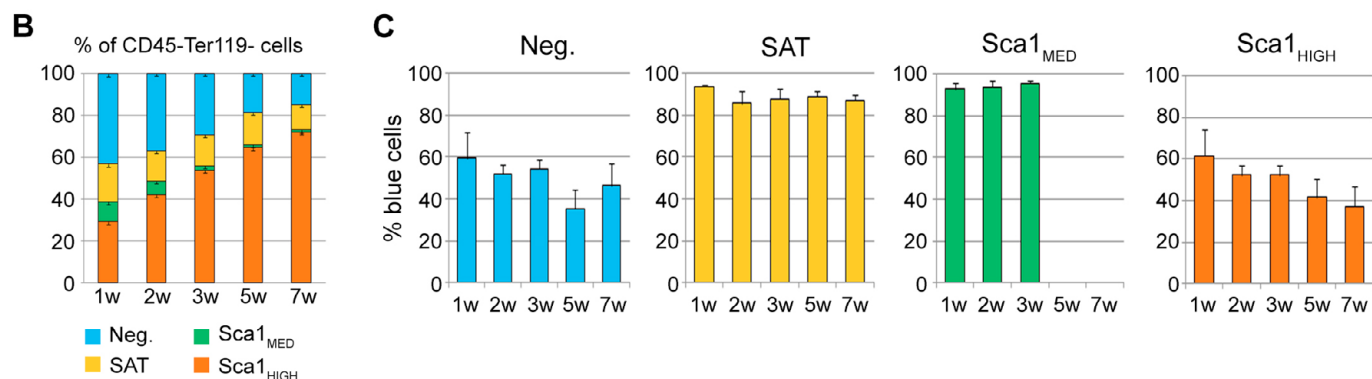
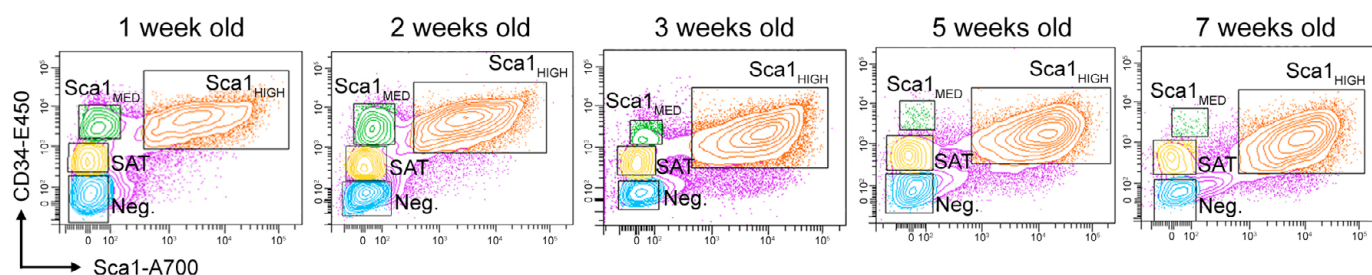


Fig. S2. FACS profiles of muscle cells during weeks 1-7 of postnatal life. (A) FACS profile of muscle cells from 1-, 2-, 3-, 5- and 7-week-old PW1^{nLacZ} mice limb muscles. (B) Distribution of cell populations described in A presented as the mean percentage \pm s.e.m. of CD45-Ter119- cells from at least three independent experiments. (C) Quantification of cells positive for PW1 in each population described in A on freshly sorted cytopun cells presented as the mean percentage \pm s.e.m. from at least three independent experiments.

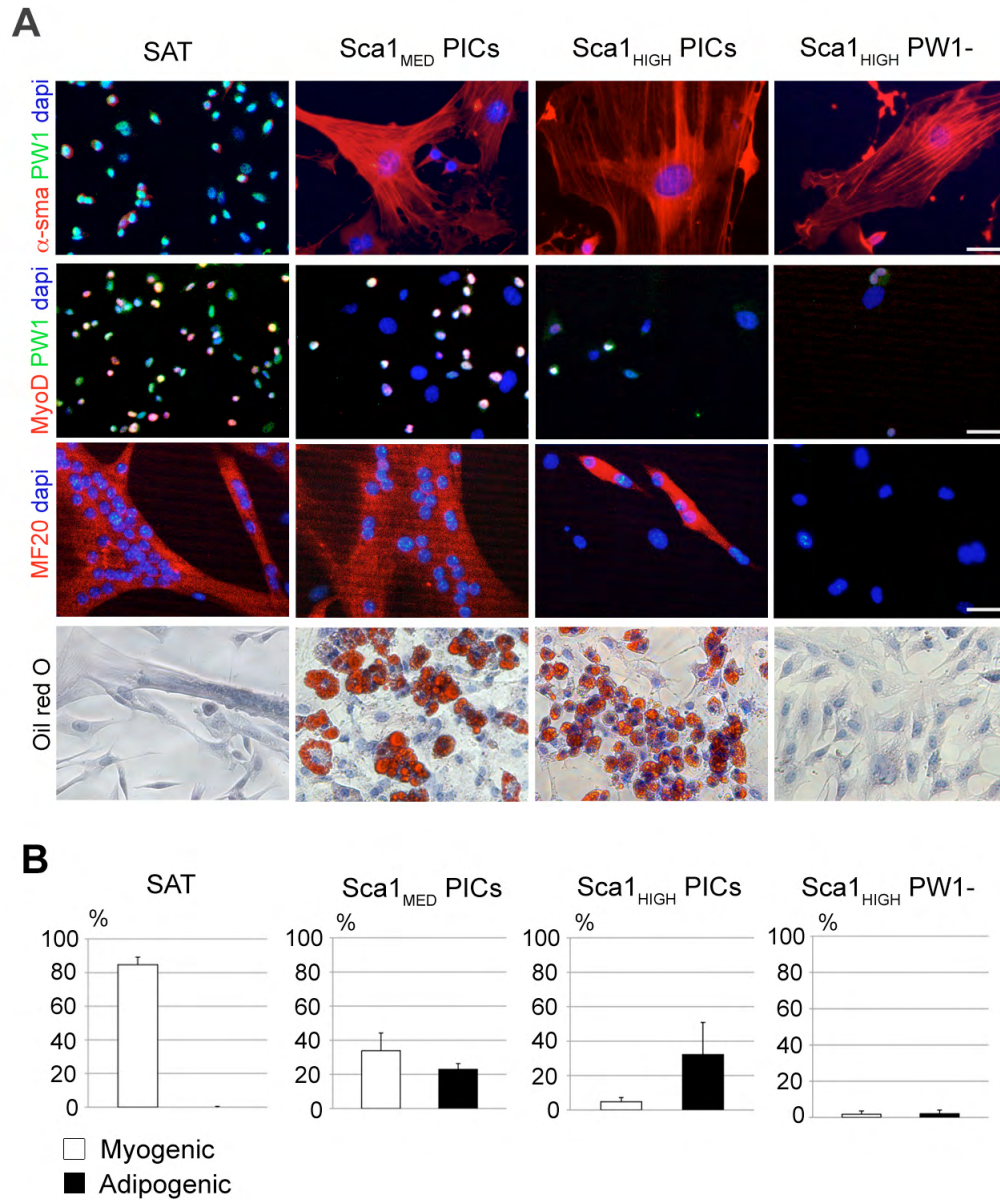


Fig. S3. Cell fate potentials of 2-week-old muscle cells. (A) Representative images of FACS-isolated populations from 2-week-old PW1^{nLacZ} mice immunostained for smooth muscle marker (α -sma, top panel), myogenic markers (MyoD, MF20, middle panels), or histochemically stained for adipocytic differentiation (Oil Red O, bottom panel). Nuclei were counterstained by DAPI (blue) or hematoxylin. Scale bars: 20 μ m. (B) *In vitro* myogenic and adipogenic potential of cells presented in A. Myogenic potential was assessed by fusion index after 1 week in growth media (GM) followed by 2 days in DM, and adipogenic potential was assessed by the percentage of adipocytes after 1 week in GM followed by 5 days in ADM. Values are presented as percentage of positive cells \pm s.e.m. from at least three independent experiments.

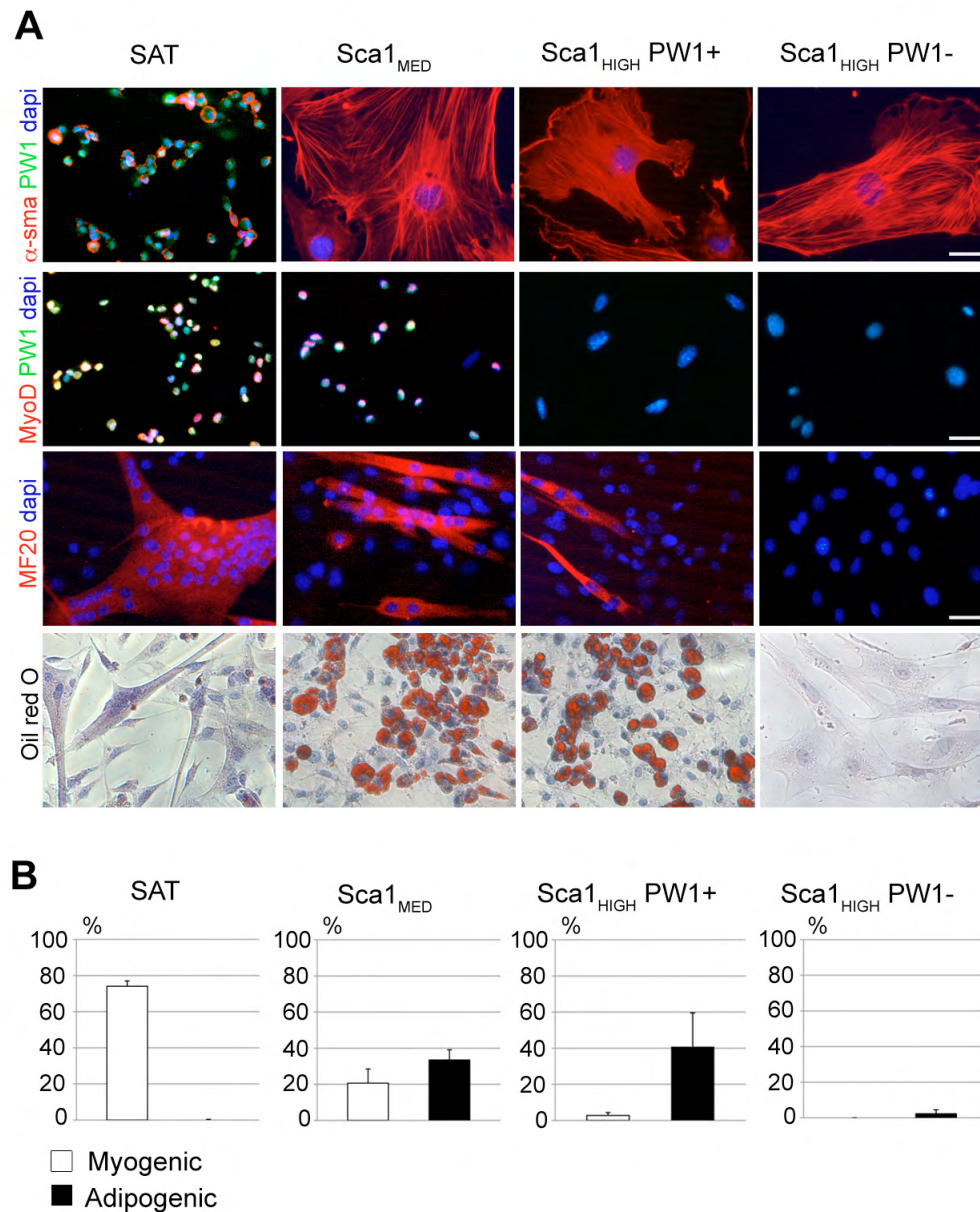


Fig. S4. Cell fate potentials of 3-week-old muscle cells. (A) Representative images of FACS-isolated populations from 3-week-old PW1^{nLacZ} mice immunostained for smooth muscle marker (α -sma, top panel), myogenic markers (MyoD, MF20, middle panels), or histochemically stained for adipocytic differentiation (Oil Red O, bottom panel). Nuclei were counterstained by DAPI (blue) or hematoxylin. Scale bars: 20 μ m. (B) Quantification of myogenic and adipogenic potentials of cells treated as described in A. Values are presented as percentage of positive cells \pm s.e.m. from at least three independent experiments for each condition.

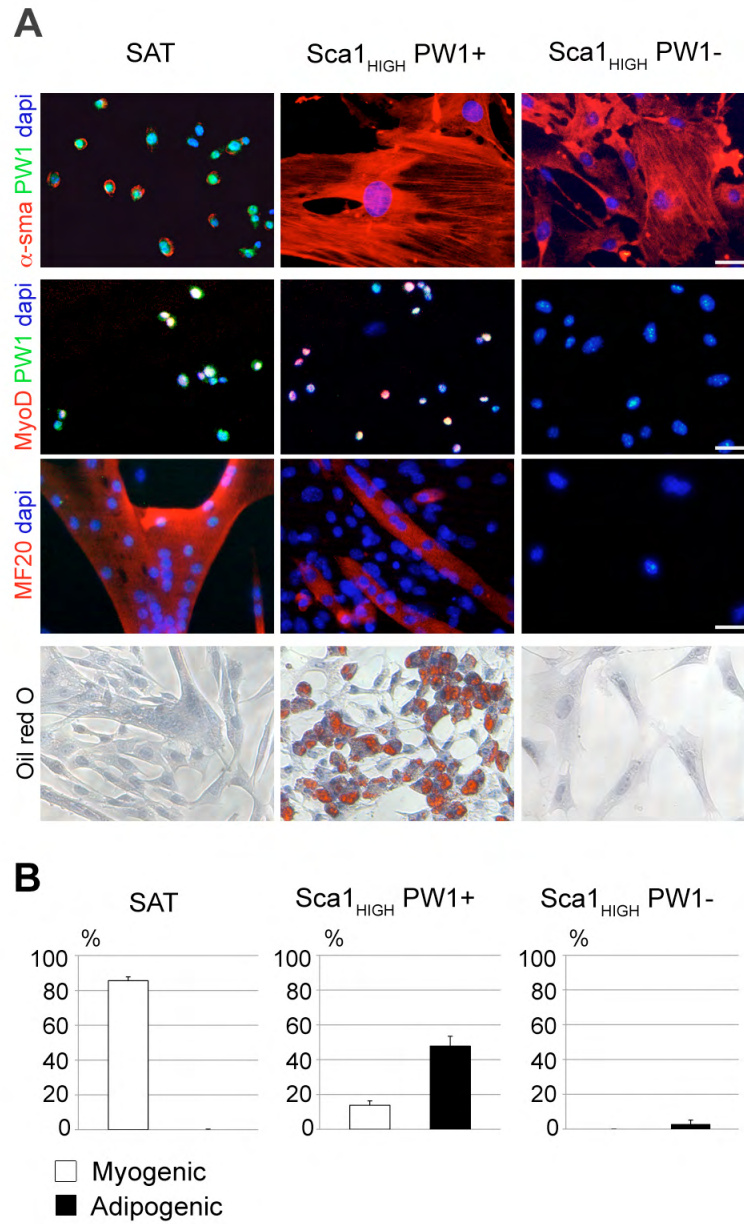


Fig. S5. Cell fate potentials of 5-week-old muscle cells. (A) Representative images of FACS-isolated populations from 5-week-old PW1^{nLacZ} mice immunostained for smooth muscle marker (α -sma, top panel), myogenic markers (MyoD, MF20, middle panels), or histochemically stained for adipocytic differentiation (Oil Red O, bottom panel). Nuclei were counterstained by DAPI (blue) or hematoxylin. Scale bars: 20 μ m. (B) Quantification of myogenic and adipogenic potentials of cells treated as described in A. Values are presented as percentage of positive cells \pm s.e.m. from at least three independent experiments for each condition.

Table S1. Primers used for semi-quantitative PCR analyses

Gene	Forward primer	Reverse primer
<i>18S</i>	CGGCTACCACATCCAAGGAA	TATACGCTATTGGAGCTGGAA
<i>Cd68</i>	AGGTCCAGGGAGGTTGTGA	CCGCCATGTAGTCCAGGTAG
<i>Fabp4 (Ap2)</i>	ACCCTCCTGTGCTGCAGCCTT	TGTGGCAAAGCCCACTCCCACT
<i>Egfr4</i>	ATCTTTCAGGGGACACCAGCTTTG	TGCCCTCTTTGTACCAGTGACGA
<i>Hoxc9</i>	GCAGCAAGCACAAAGAGGAGAAG	GCGTCTGGTACTTGGTGTAGGG
<i>Ki67</i>	GCATGTATCACCTGAGCCTGTGAA	TGACTTGGCCCCGAGATGTAGATT
<i>Myf5</i>	AGCTGGCTCTTCAGGAGACA	ACGTGATAGATAAGTCTGGAG
<i>Myod</i>	ACATAGACTTGACAGGCCCCGA	AGACCTTCGATGTAGCGGATGG
myogenin	CTAGAGGCCCTTGCTCAGGTC	GAAATGATCTCCTGGGTTGG
<i>Ng2</i>	TCCAGATCACTGGGCCCTTACTT	CTCTGAGGCATTAGCTAGCAGAAC
<i>P2y14</i>	GAAGCCAGACGTGAAGGAGTTCAT	GCAAGCTTCGTCAACAGAATCCAG
<i>Pax3</i>	ACCAGGCATGGATTTTCAAGC	GAGGGGAGAGAGCATAGTC
<i>Pax7</i>	TCTTACTGCCCACCCACCTA	AGGAAGAAGTCCCAGCACAG
<i>Pdgfa</i>	AGACCAGGACGGTCATTTACGAGA	CTTCCTGACATACTCCACTTTGGC
<i>Pdgfra</i>	GACGAGTGTCTTCGCCAAAGTG	CAAAATCCGACCAAGCACGAGG
<i>Pdgfrb</i>	GCAGCGACACTCCAACAAGCA	TCACTCTCCCCAGTCAGGTTCAAG
<i>Prdm16</i>	CAGCACGGTGAAGCCATTC	GCGTGCATCCGCTTGTG
<i>Qprt</i>	GAACGGGTGGCTCTTAACAC	CAGGCTGCTACATTCCACCT
<i>Sm22</i>	TAATGGCTTTGGGCAGTTTG	TGCAGTTGGCTGTCTGTGAA
<i>Tie2</i>	TGGACTCTTTAGCCGGCTTAGTTC	CAGTGGATCTTGGTGCTGGTTCAT
<i>Ucp1</i>	ACTGCCACACCTCCAGTCATT	CTTTGCCTCACTCAGGATTGG
vimentin	AGTCAAACGAGTACCGGAGACA	GTATTCACGAAGGTGACGAGCCAT