Tissue Section	CXCR4+ Cells		CXCR4- Cells		
	Mouse 1	Mouse 2	Mouse 3	Mouse 4	
Tibialis Anterior (T)					
T1	150	102	21	28	
T2	75	99	60	43	
Т3	125	120	45	24	
T4	78	68	55	57	
T5	88	96	48	33	
Quadriceps (Q)					
Q1	235	220	48	53	
Q2	330	265	63	36	
Q3	123	145	88	44	
Q4	323	235	62	27	
Q5	145	120	92	42	
Tissue Section			Freshly Isolated SP Cells		
	CXCR4+ Cells & Ab Mouse 5 Mouse 6		Mouse 7 Mouse 8		
Tibialis Anterior (T)	Mouse 5	wouse o	wouse /	Mouse o	
TIDIAIIS AITCEITOI (T)	80	75	18	7	
T2	34	43	20	, 15	
T3	42	23	20	24	
T4	42	42	8	26	
T5	72	44	0	11	
Quadriceps (Q)	12		Ũ		
Q1	72	80	11	8	
Q2	88	46	15	6	
Q3	66	100	6	12	
Q4	102	78	12	17	
Q5	92	97	6	5	

Supplemental Table 1. Number of eGFP-positive mononuclear cells in skeletal

muscle sections from mice transplanted with different fractions of eGFP-positive donor cells. A significantly greater number of eGFP-positive mononuclear cells were identified in tibialis anterior and quadriceps muscle sections from mice who were transplanted with CXCR4-positive eGFP-positive SP-derived cultured cells than from mice who received CXCR4-negative eGFP-positive SP-derived cultured cells (p<0.001); CXCR4-positive eGFP-positive SP-derived cultured cells (p<0.001); CXCR4-positive eGFP-positive SP-derived cultured cells pretreated with a CXCR4 blocking antibody (p<0.001); and eGFP-positive freshly isolated SP cells (p<0.001) by one-tailed t-test. SP = side population. Ab = blocking antibody against CXCR4. T1-T5 = sections from tibialis anterior muscle. Q1-Q5 = sections from quadriceps muscle. eGFP = enhanced green fluorescent protein.

Supplemental Table 2. Percent Engraftment of eGFP-positive donor cells into

Tissue Section	CXCR4+ Cells			CXCR4- Cells			
	Mouse 1	Mouse 2	Mouse 3	Mouse 4	Mouse 5	Mouse 6	
Tibialis Anterior (T)							
T1	0%	0%	0%	0%	0%	0%	
T2	1.79%	0%	7.32%	0%	0%	0%	
Т3	0%	7.04%	0%	0%	0%	2.56%	
T4	8.14%	4.17%	4.88%	0%	5.56%	0%	
Т5	3.08%	4.44%	6.25%	0%	0%	5.62%	
Т6	3.13%	0%	6.82%	0%	2.70%	0%	
Τ7	1.12%	5.26%	0%	4.17%	3.37%	0%	
Т8	0%	0%	0%	2.67%	2.78%	4.35%	
Т9	0%	7.14%	0%	3.49%	0%	6.56%	
T10	0%	0%	6.67%	1.45%	0%	0%	
Quadriceps (Q)							
Q1	0%	0%	0%	0%	0%	0%	
Q2	0.60%	7.59%	0%	2.22%	0%	0%	
Q3	0%	0%	6.90%	1.99%	2.11%	0.50%	
Q4	1.48%	0%	8.25%	2.48%	2.78%	0.50%	
Q5	3.81%	7.07%	0.53%	3.70%	0.50%	2.78%	
Q6	2.40%	7.76%	0%	0.34%	4.17%	4.52%	
Q7	7.28%	0.45%	5.06%	0%	2.27%	2.13%	
Q8	0%	5.67%	7.35%	0%	0%	0%	
Q9	0%	0%	6.20%	0%	0%	3.57%	
Q10	0%	0%	0%	0%	0%	3.28%	
	- / -			- / -			
			CXCR4+ Cells & Ab				
Tissue Section	CXC	CR4+ Cells	& Ab	Fresh	ly Isolated SF	^D Cells	
Tissue Section	CX0 Mouse 7	CR4+ Cells Mouse 8	& Ab Mouse 9	Fresh Mouse 10	ly Isolated SF Mouse 11	^D Cells Mouse 12	
Tissue Section Tibialis Anterior (T)							
Tibialis Anterior (T)	Mouse 7	Mouse 8	Mouse 9	Mouse 10	Mouse 11	Mouse 12	
Tibialis Anterior (T) T1	Mouse 7 0%	Mouse 8 0%	Mouse 9 0%	Mouse 10 0%	Mouse 11 0%	Mouse 12 0%	
Tibialis Anterior (T) T1 T2	Mouse 7 0% 0%	Mouse 8 0% 0%	Mouse 9 0% 0%	Mouse 10 0% 0%	Mouse 11 0% 0%	Mouse 12 0% 0%	
Tibialis Anterior (T) T1 T2 T3	Mouse 7 0% 0% 1.54%	Mouse 8 0% 0% 0%	Mouse 9 0% 0% 0%	Mouse 10 0% 0% 0%	Mouse 11 0% 0% 0%	Mouse 12 0% 0% 0%	
Tibialis Anterior (T) T1 T2 T3 T4	Mouse 7 0% 0% 1.54% 7.14%	Mouse 8 0% 0% 0%	Mouse 9 0% 0% 4.41%	Mouse 10 0% 0% 0% 0%	Mouse 11 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79%	
Tibialis Anterior (T) T1 T2 T3 T4 T5	Mouse 7 0% 0% 1.54% 7.14% 4.65%	Mouse 8 0% 0% 0% 5.88%	Mouse 9 0% 0% 4.41% 0%	Mouse 10 0% 0% 0% 0%	Mouse 11 0% 0% 0% 0% 0%	Mouse 12 0% 0% 1.79% 0%	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6	Mouse 7 0% 0% 1.54% 7.14% 4.65% 5.06%	Mouse 8 0% 0% 0% 5.88% 6.06%	Mouse 9 0% 0% 4.41% 0% 0%	Mouse 10 0% 0% 0% 0% 0%	Mouse 11 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79% 0% 0%	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7	Mouse 7 0% 1.54% 7.14% 4.65% 5.06% 1.30%	Mouse 8 0% 0% 0% 5.88% 6.06% 0%	Mouse 9 0% 0% 4.41% 0% 0% 7.95%	Mouse 10 0% 0% 0% 0% 0% 0%	Mouse 11 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79% 0% 0% 0%	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7 T8	Mouse 7 0% 1.54% 7.14% 4.65% 5.06% 1.30% 1.16%	Mouse 8 0% 0% 0% 5.88% 6.06% 0% 6.33%	Mouse 9 0% 0% 0% 4.41% 0% 0% 7.95% 11.11%	Mouse 10 0% 0% 0% 0% 0% 0% 0%	Mouse 11 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79% 0% 0% 0% 0%	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7 T8 T9	Mouse 7 0% 0% 1.54% 7.14% 4.65% 5.06% 1.30% 1.16% 2.63%	Mouse 8 0% 0% 0% 5.88% 6.06% 0% 6.33% 7.32%	Mouse 9 0% 0% 0% 4.41% 0% 0% 7.95% 11.11% 5.88%	Mouse 10 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 11 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 1.79% 0% 0% 0% 0% 0%	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 Quadriceps (Q)	Mouse 7 0% 0% 1.54% 7.14% 4.65% 5.06% 1.30% 1.16% 2.63% 0%	Mouse 8 0% 0% 0% 5.88% 6.06% 0% 6.33% 7.32% 0%	Mouse 9 0% 0% 4.41% 0% 0% 7.95% 11.11% 5.88% 7.55%	Mouse 10 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 11 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 1.79% 0% 0% 0% 0% 0% 0%	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 Quadriceps (Q) Q1	Mouse 7 0% 0% 1.54% 7.14% 4.65% 5.06% 1.30% 1.16% 2.63% 0%	Mouse 8 0% 0% 0% 5.88% 6.06% 0% 6.33% 7.32% 0% 0.65%	Mouse 9 0% 0% 4.41% 0% 0% 7.95% 11.11% 5.88% 7.55% 0%	Mouse 10 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 11 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79% 0% 0% 0% 0% 0% 0%	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 Quadriceps (Q) Q1 Q2	Mouse 7 0% 0% 1.54% 7.14% 4.65% 5.06% 1.30% 1.16% 2.63% 0% 0%	Mouse 8 0% 0% 0% 5.88% 6.06% 0% 6.33% 7.32% 0% 0.65% 7.79%	Mouse 9 0% 0% 0% 4.41% 0% 0% 7.95% 11.11% 5.88% 7.55% 0% 0.61%	Mouse 10 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 11 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79% 0% 0% 0% 0% 0% 0% 0%	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 Quadriceps (Q) Q1 Q2 Q3	Mouse 7 0% 0% 1.54% 7.14% 4.65% 5.06% 1.30% 1.16% 2.63% 0% 0% 0% 6.84%	Mouse 8 0% 0% 0% 5.88% 6.06% 0% 6.33% 7.32% 0% 0.65% 7.79% 7.39%	Mouse 9 0% 0% 0% 4.41% 0% 0% 7.95% 11.11% 5.88% 7.55% 0% 0.61% 0%	Mouse 10 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 11 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79% 0% 0% 0% 0% 0% 0% 0% 0%	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 Quadriceps (Q) Q1 Q2 Q3 Q4	Mouse 7 0% 0% 1.54% 7.14% 4.65% 5.06% 1.30% 1.16% 2.63% 0% 0% 0% 6.84% 2.78%	Mouse 8 0% 0% 0% 5.88% 6.06% 0% 6.33% 7.32% 0% 0.65% 7.79% 7.39% 0%	Mouse 9 0% 0% 0% 4.41% 0% 0% 7.95% 11.11% 5.88% 7.55% 0% 0.61% 0% 6.00%	Mouse 10 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	Mouse 11 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 Quadriceps (Q) Q1 Q2 Q3 Q4 Q5	Mouse 7 0% 0% 1.54% 7.14% 4.65% 5.06% 1.30% 1.16% 2.63% 0% 0% 6.84% 2.78% 2.18%	Mouse 8 0% 0% 0% 5.88% 6.06% 0% 6.33% 7.32% 0% 0.65% 7.79% 7.39% 0% 0%	Mouse 9 0% 0% 0% 4.41% 0% 0% 7.95% 11.11% 5.88% 7.55% 0% 0.61% 0% 6.00% 6.45%	Mouse 10 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	Mouse 11 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 Quadriceps (Q) Q1 Q2 Q3 Q4 Q5 Q6	Mouse 7 0% 0% 1.54% 7.14% 4.65% 5.06% 1.30% 1.16% 2.63% 0% 0% 6.84% 2.78% 2.18% 1.67%	Mouse 8 0% 0% 0% 5.88% 6.06% 0% 6.33% 7.32% 0% 0.65% 7.79% 7.39% 0% 0% 0% 0%	Mouse 9 0% 0% 0% 4.41% 0% 0% 7.95% 11.11% 5.88% 7.55% 0% 0.61% 0% 6.00% 6.45% 0%	Mouse 10 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	Mouse 11 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 Quadriceps (Q) Q1 Q2 Q3 Q4 Q5 Q6 Q7	Mouse 7 0% 0% 1.54% 7.14% 4.65% 5.06% 1.30% 1.16% 2.63% 0% 0% 0% 0% 6.84% 2.78% 2.18% 1.67% 0%	Mouse 8 0% 0% 0% 5.88% 6.06% 0% 6.33% 7.32% 0% 0% 0.65% 7.79% 7.39% 0% 0% 0% 0% 0%	Mouse 9 0% 0% 0% 4.41% 0% 0% 7.95% 11.11% 5.88% 7.55% 0% 0.61% 0% 6.00% 6.45% 0% 0.56%	Mouse 10 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	Mouse 11 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 Quadriceps (Q) Q1 Q2 Q3 Q4 Q2 Q3 Q4 Q5 Q6 Q7 Q8	Mouse 7 0% 0% 1.54% 7.14% 4.65% 5.06% 1.30% 1.16% 2.63% 0% 0% 6.84% 2.78% 2.18% 1.67% 0% 0% 0%	Mouse 8 0% 0% 0% 5.88% 6.06% 0% 6.33% 7.32% 0% 0.65% 7.79% 7.39% 0% 0% 0% 0.45% 5.79% 0.57%	Mouse 9 0% 0% 0% 4.41% 0% 0% 7.95% 11.11% 5.88% 7.55% 0% 0.61% 0% 6.00% 6.45% 0% 0.56% 7.59%	Mouse 10 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	Mouse 11 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	
Tibialis Anterior (T) T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 Quadriceps (Q) Q1 Q2 Q3 Q4 Q5 Q6 Q7	Mouse 7 0% 0% 1.54% 7.14% 4.65% 5.06% 1.30% 1.16% 2.63% 0% 0% 0% 0% 6.84% 2.78% 2.18% 1.67% 0%	Mouse 8 0% 0% 0% 5.88% 6.06% 0% 6.33% 7.32% 0% 0% 0.65% 7.79% 7.39% 0% 0% 0% 0% 0%	Mouse 9 0% 0% 0% 4.41% 0% 0% 7.95% 11.11% 5.88% 7.55% 0% 0.61% 0% 6.00% 6.45% 0% 0.56%	Mouse 10 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	Mouse 11 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Mouse 12 0% 0% 0% 1.79% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0	

mdx^{5cv} skeletal muscle 30 days after transplantation.

Supplemental Table 2. Percent Engraftment of eGFP-positive donor cells into mdx^{5cv} skeletal muscle 30 days after transplantation. Percentages equal number of eGFP muscle fibers in one section divided by total number of muscle fibers in that section. Statistical analyses (one-tailed t-test) comparing non-zero values above shows that mice that received CXCR4-positive eGFP-positive SP-derived cultured cells had significantly more eGFP-positive fibers than mice who received CXCR4-negative eGFPpositive SP-derived cultured cells (Quadriceps: p=0.001; Tibialis Anterior: p=0.04) and eGFP-positivefreshly isolated SP cells (Quadriceps and Tibialis Anterior: p<0.001) in sections in which engraftment was documented. No significant difference in engraftment rates identified between mice that received CXCR4-positive eGFP-positive SP-derived cultured cells and CXCR4-positive eGFP-positive SP-derived cultured cells pretreated with CXCR4 blocking antibody (Quadriceps: p=0.13; Tibialis Anterior: p=0.41). SP = side population. Ab = blocking antibody against CXCR4. T1-T10 = sections from tibialis anterior muscle. Q1-Q10 = sections from quadriceps muscle. eGFP = enhanced green fluorescent protein.