Supplemental Table 1. Satellite and stem cell genes expressed in uninjured and activated satellite cells.

Gene Symbol	Gene Title	Uninjured Rel Exp Level	24hr after Injury Rel Exp Level
Abcg1	ATP-binding cassette, sub-family G (WHITE), member 1	28.10	15.21
Abcg1	ATP-binding cassette, sub-family G (WHITE), member 1	6.61	5.47
Abcg2	ATP-binding cassette, sub-family G (WHITE), member 2	434.82	20.97
Abcg3	ATP-binding cassette, sub-family G (WHITE), member 3	17.96	12.57
Abcg3	ATP-binding cassette, sub-family G (WHITE), member 3	5.22	5.77
Abcg4	ATP-binding cassette, sub-family G (WHITE), member 4	4.68	4.98
Abcg4	ATP-binding cassette, sub-family G (WHITE), member 4	12.32	8.93
Abcg5	ATP-binding cassette, sub-family G (WHITE), member 5	5.04	5.46
Abcg8	ATP-binding cassette, sub-family G (WHITE), member 8	4.71	5.10
Cd34	CD34 antigen	64.47	5.65
nanog	Nanog homeobox	5.36	6.80
sdc3	syndecan 3	27.37	30.64
sdc3	syndecan 3	7.06	8.54
sdc3	syndecan 3	44.35	35.76
sdc4	syndecan 4	7.63	74.68
sdc4	syndecan 4	24.00	48.91

Supplemental Table 1. Stem and satellite cell genes expressed in uninjured and activated satellite cells.

Relative expression of genes obtained from microarray data from FACS purified Syndecan-3+/Syndecan-4+ satellite cells isolated from uninjured muscle compared to cells isolated 24hr following $BaCl_2$ injury, filtered for stem cell genes in the *Abcg* family, *Cd34*, *nanog*, and satellite cell genes *sdc3* and *sdc4* (probesets orded 5' to 3').

Supplemental Table 2. Donor derived myofibers 30d following transplantation of satellite-SP cells.

Field	Fibers in field	Central nuclei	ß-gal+	β-gal+ w/central nuclei
1	36	27	6	3
2	40	19	21	12
3	55	30	25	14
4	62	38	20	14
5	54	31	10	6
6	58	37	35	24
7	68	30	24	11
8	79	45	3	3
9	59	28	6	2
Total	511	285	150	89

Supplemental Table 2. Donor derived myofibers 30d following transplantation of satellite-SP cells.

Cross sections from host tibialis anterior muscle 30 days post transplantation of satellite-SP cells from ROSA26 mice scored across nine fields with no overlapping fibers for the number of: fibers in field, centrally located nuclei, ß-gal+(ß-galactosidase+) fibers and ß-gal+ fibers with centrally located nuclei.

Supplemental Table 3. Donor derived satellite cells 30d following satellite-SP cell transplantation.

Section	Syndecan-4+	ß-gal+
1	4	3
2	6	5
3	6	4
4	3	3
5	3	2
6	5	2
7	2	1
8	3	3
9	4	4
Total	36	27

Supplemental Table 3. Donor derived satellite cells 30d following satellite-SP cell transplantation.

Cross sections from host tibialis anterior muscle harvested 30 days following satellite-SP cell transplantation from ROSA26 mice were scored across nine different sections for Syndecan-4+ and Syndecan-4+/ ß-gal+ satellite cells.

Supplemental Table 4. Dystrophin+ fibers 30d following transplantation of satellite-SP cells into dystrophic muscle.

Field	Fibers in field	Central nuclei	Dystrophin+	Dystrophin+ w/central nuclei
1	68	28	50	22
2	89	42	70	42
3	69	45	50	30
4	48	29	26	19
5	50	28	25	19
6	72	34	38	20
7	75	33	65	33
8	50	30	30	15
9	52	33	33	16
10	40	32	0	0
Total	613	334	374	216

Supplemental Table 4. Dystrophin+ fibers following transplantation of satellite-SP cells into dystrophic muscle.

Cross sections from host tibialis anterior muscle 30d after transplantation of satellite-SP cells scored across ten fields with no overlapping fibers for the number of: fibers in field, centrally located nuclei, Dystrophin+ fibers and Dystrophin+ fibers with centrally located nuclei.

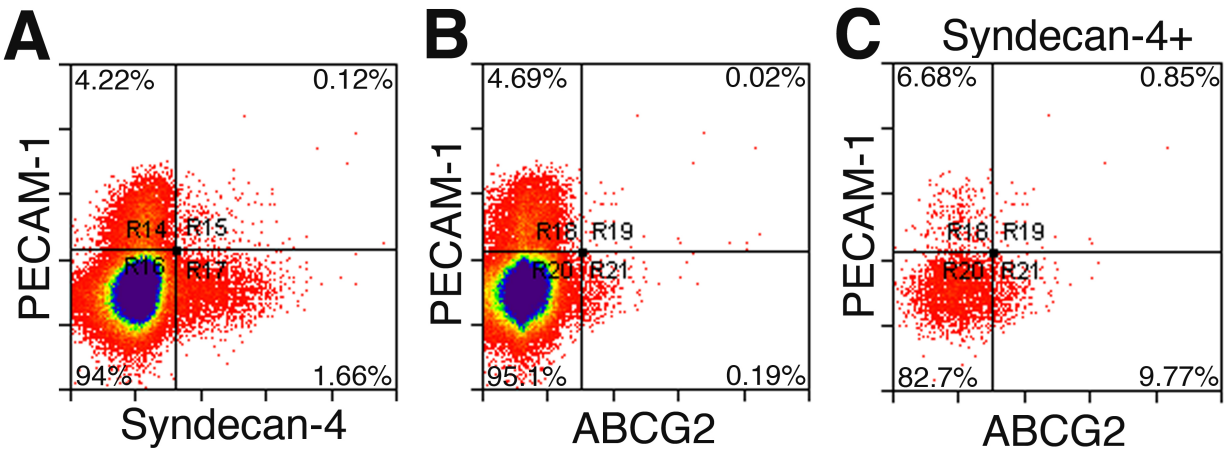
Supplemental Figure 1:

Live FACS profile for hindlimb skeletal muscle. Profiling simultaneously for 3 markers on live cells (**A**) a small percentage of PECAM-1+ (CD31) are Syndecan-4+ (7%) and (**B**) a small percentage of ABCG2+ cells are PECAM-1+ (10%). (**C**) When gated for Syndecan-4+ cells, the percentage of Syndecan-4+/ABCG2+ cells that are Syndecan-4+/ABCG2+/PECAM-1+ is 8%, essentially identical to the percentage of Syndecan-4+/PECAM1+ cells (8%). Satellite cells express PECAM-1 (De Angelis et al., 1999) and thus, this protein cannot be used to identify contaminating endothelial cells. Since both the Syndecan-4+/ABCG2+ and the Syndecan-4+ populations have similar levels of PECAM-1 it is unlikely that this marker delineates the differences between these cells.

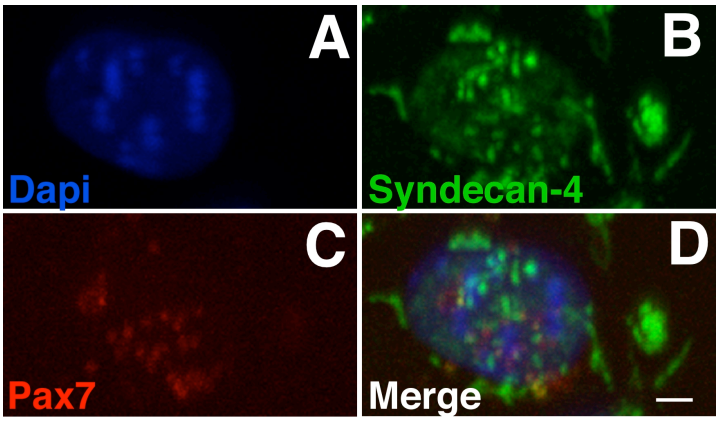
Supplemental Figure 2

FACS sorted satellite SP cell were cytospun, fixed and fluoresecence was detected for DAPI (**A**, **D**, blue), Syndecan-4 (**B**, **D**, green) and stained for Pax7 (**C**, **D**, red). A single cells is shown where syndecan-4 stains the cytoplasm and Pax7 stains the nucleus that is marked by DAPI. Satellite SP cells are small and round with little cytoplasm and distort when cytospun.

Tanaka et al. Supplemental Fig. 1



Tanaka et al. Supplemental Fig. 2



Supplemental References:

De Angelis, L., Berghella, L., Coletta, M., Lattanzi, L., Zanchi, M., Cusella-De Angelis, M.G., Ponzetto, C., and Cossu, G. (1999). Skeletal myogenic progenitors originating from embryonic dorsal aorta coexpress endothelial and myogenic markers and contribute to postnatal muscle growth and regeneration [see comments]. J Cell Biol *147*, 869-878.