

Table S2. Classification showing the involvement of genes common for LIM and HER in selected biological processes associated with muscle development (*Pathway Studio*).

| Process | Number of genes | Gene symbol | p-value |
|---------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| muscle filament sliding | 13 | <i>des; myl6b; tnnt2; myl4; myl2; myl1; actc1; myh3; tnnc2; tpm1; tnnc1; acta1; myl6</i> | 2,04E-08 |
| ventricular cardiac muscle tissue morphogenesis | 10 | <i>tnnt2; myl2; hand1; col11a1; smad7; foxc2; foxs1; fkbp1a; tpm1; tnnc1</i> | 1,76E-06 |
| muscle contraction | 20 | <i>chrng; des; myl6b; utrn; tnnt2; chrne; myl1; chrnbl; slmap; vcl; myl9; fkbp1a; ltb4r; hsbp1; asph; tpm1; acta1; myl6; sgca; mylk</i> | 9,99E-06 |
| actomyosin based movement | 11 | <i>dysf; myh3; myl6b; myl9; tnnt2; myl4; myl2; acta1; myl6; myl1; actc1</i> | 1,23E-04 |
| negative regulation of cell proliferation | 44 | <i>tes; foxo4; msx2; dnajb2; dpt; gal; kmt2a; ptpfrf; rarg; fgfr3; cebpa; sst; nfl; cdh13; tgfb2; serpine2; timp2; rassf5; six5; bax; tnfrsf8; tgfb1i1; sfrp5; lefty2; gabbr1; myog; csk; pml; pla2g2a; hras; ddr1; rbm5; klf13; hrg; hyal1; osm; asph; il1rl1; ptk2b; dis3l2; speg; igf1; cdkn1c; col4a3</i> | 2,43E-04 |
| muscle organ development | 17 | <i>srpk3; foxo4; tagln3; myf5; des; utrn; myl4; myl1; zfhx3; sgce; myog; myh3; sgcb; itga7; speg; igf1; sgca</i> | 3,91E-04 |
| muscle hypertrophy | 1 | <i>igf1</i> | 1,07E-03 |
| smooth muscle cell migration | 3 | <i>plau; itgb3; ddr1</i> | 2,07E-03 |
| regulation of muscle filament sliding speed | 2 | <i>tnnt2; tnnc1</i> | 2,38E-03 |
| regulation of muscle contraction | 7 | <i>atp2a1; tnnt2; tnnc2; myl9; tpm1; tnnc1; casq2</i> | 2,40E-03 |
| skeletal muscle tissue development | 10 | <i>srpk3; zbtb18; myf5; myl6b; nfl; ctsb; tgfb2; myog; itga7; myl6</i> | 2,51E-03 |
| satellite cell maintenance involved in skeletal muscle regeneration | 1 | <i>igf1</i> | 3,21E-03 |
| myotube cell development | 1 | <i>igf1</i> | 4,27E-03 |

| | | | |
|------------------------------------------------------------------------------------------------------------------------------|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| cell differentiation | 56 | <i>clptm1; prmt7; znf281; metrn; foxo4; myf5; gli1; znf541; cebpa; amigo1; arhgap24; tcp11; bmp1b; gadd45b; neurog1; serpine2; ifrd1; lgr4; hand1; ngrn; hmx3; zc3h12a; rps7; fgf3; uhrf2; pax5; piwil4; amh; dmrt1; ngfr; gadd45g; csrp2; ptk2b; creb3l4; neurod4; srpk3; rmdn3; ext2; fgfr3; elf3; insm1; camk2g; inha; angptl4; ndrg2; tgfb1i1; sfrp5; pura; myog; myrf; efnb3; jag2; wipf3; speg; rnf114; bmp8b</i> | 4,64E-03 |
| myoblast proliferation | 1 | <i>igf1</i> | 5,34E-03 |
| response to muscle activity involved in regulation of muscle adaptation | 2 | <i>sepn1; myog</i> | 6,90E-03 |
| adult somatic muscle development | 2 | <i>utrn; ifrd1</i> | 6,90E-03 |
| positive regulation of myoblast proliferation | 1 | <i>igf1</i> | 8,53E-03 |
| cardiac muscle contraction | 8 | <i>tnnt2; myl4; myl2; myl1; actc1; tpm1; tnnc1; casq2</i> | 1,14E-02 |
| positive regulation of cardiac muscle hypertrophy | 1 | <i>igf1</i> | 1,28E-02 |
| cardioblast differentiation | 2 | <i>tgfb2; ece2</i> | 1,34E-02 |
| muscle cell differentiation | 6 | <i>myf5; cdh15; ifrd1; abl1; myog; speg</i> | 1,39E-02 |
| regulation of cardiac muscle cell contraction | 1 | <i>casq2</i> | 1,59E-02 |
| skeletal muscle fiber development | 5 | <i>sepn1; ppp3ca; myog; acta1; homer1</i> | 1,73E-02 |
| positive regulation of cell differentiation | 6 | <i>fgfr3; ins; junb; bmp1b; hsf4; neurod4</i> | 2,35E-02 |
| skeletal muscle cell differentiation | 7 | <i>atf3; myf5; lemd2; ankrd1; pax5; ngfr; foxn2</i> | 2,42E-02 |
| cardiac myofibril assembly | 3 | <i>myl2; pdgfra; actc1</i> | 3,39E-02 |
| muscle cell fate commitment | 2 | <i>myf5; myog</i> | 4,24E-02 |
| skeletal muscle thin filament assembly | 2 | <i>actc1; acta1</i> | 4,24E-02 |
| negative regulation of planar cell polarity pathway involved in cardiac muscle tissue morphogenesis | 1 | <i>lrp6</i> | 4,88E-02 |
| canonical Wnt signaling pathway involved in cardiac neural crest cell differentiation involved in heart development | 1 | <i>lrp6</i> | 4,88E-02 |

| | | | |
|----------------------------------------------------------------------------------|---|--------------|----------|
| regulation of smooth muscle cell-matrix adhesion | 1 | <i>plau</i> | 4,88E-02 |
| regulation of satellite cell activation involved in skeletal muscle regeneration | 1 | <i>gjd4</i> | 4,88E-02 |
| muscle cell fate specification | 1 | <i>myl2</i> | 4,88E-02 |
| myotome development | 1 | <i>wdr19</i> | 4,88E-02 |
| skeletal muscle organ development | 1 | <i>cntfr</i> | 4,88E-02 |
| muscle tissue development | 1 | <i>srpk3</i> | 4,88E-02 |
| striated muscle atrophy | 1 | <i>myog</i> | 4,88E-02 |
| regulation of myoblast fusion | 1 | <i>myog</i> | 4,88E-02 |
