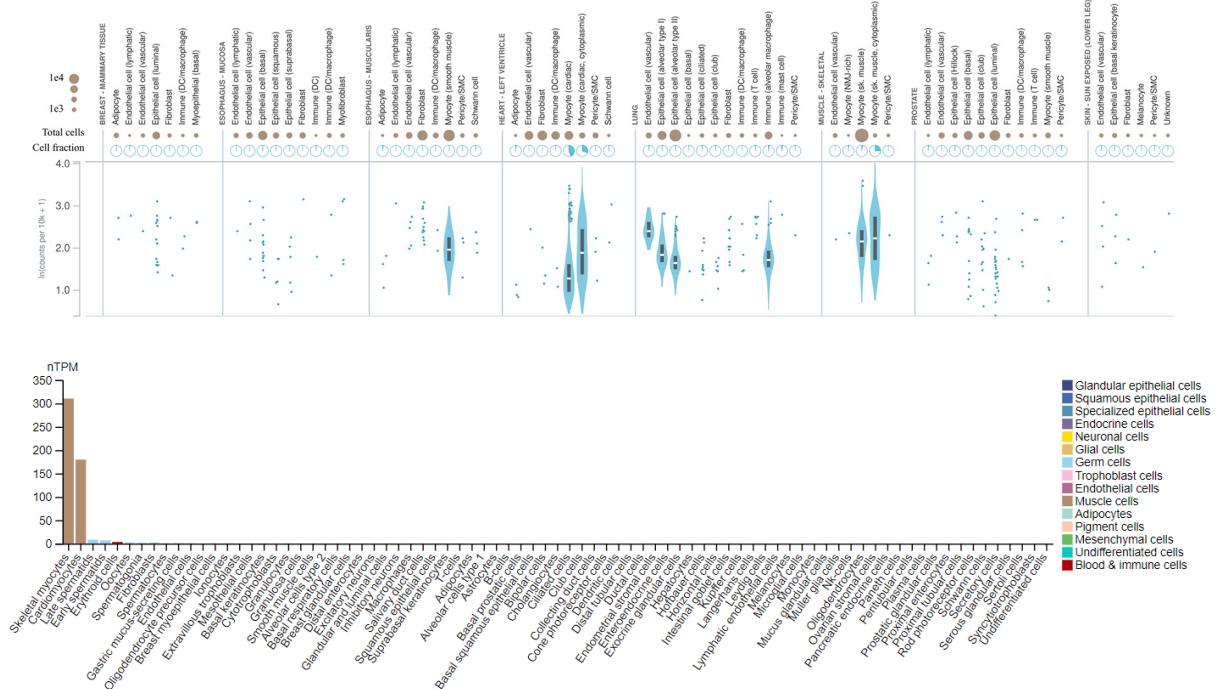
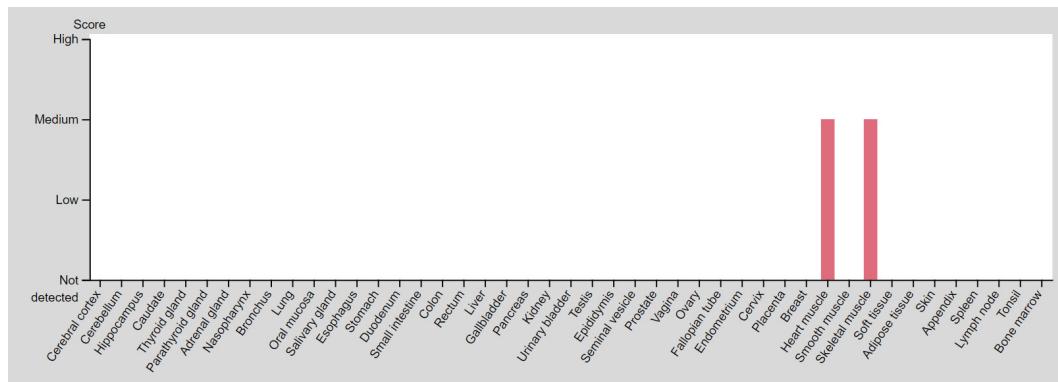


Supplementary Information



Supplementary Figure S1. *RPL3L* mRNA expression across human cell types. The cell-type specific expression data is based on single-cell snRNA sequencing and was obtained from (above) GTEx portal (<https://gtexportal.org/home/gene/RPL3L>) and (below) Human Protein Atlas database (<https://www.proteinatlas.org/ENSG00000140986-RPL3L/single+cell+type>), respectively. *RPL3L* is specifically expressed in myocytes. Furthermore, a higher fraction of heart myocytes shows the expression of the gene at mRNA level. Negligible expression of *RPL3L* is also exhibited by a few other cells.



Supplementary Figure S2. *RPL3L* protein expression across human tissues. The protein level expression of *RPL3L* was obtained from Human Protein Atlas database

(<https://www.proteinatlas.org>) and is based on immunohistochemical assays. As shown in the figure, RPL3L protein is specifically expressed in heart and skeletal muscle tissues.

Supplementary Table S1. 'MAPK signaling' pathway genes common between human and mouse

| Symbol | Name | logFC [Human] | Abs fold [Human] | adj.P.Val [Human] | Sample p(r) [Mouse] |
|----------|--|---------------|------------------|-------------------|---------------------|
| FLT1 | fms related receptor tyrosine kinase 1 | -0.64 | -1.56 | 6.28E-05 | 0.0499 |
| EGFR | epidermal growth factor receptor | 0.49 | 1.40 | 0.00025 | 0.0103 |
| PPM1A | protein phosphatase, Mg ²⁺ /Mn ²⁺ dependent 1A | -0.56 | -1.48 | 0.002391 | 0.0445 |
| PPP3CC | protein phosphatase 3 catalytic subunit gamma | 0.39 | 1.31 | 0.003197 | 0.0006 |
| PPP5C | protein phosphatase 5 catalytic subunit | 0.25 | 1.19 | 0.012586 | 0.0096 |
| FGFR1 | fibroblast growth factor receptor 1 | -0.25 | -1.19 | 0.012764 | 0.0002 |
| ERBB3 | erb-b2 receptor tyrosine kinase 3 | 0.33 | 1.25 | 0.030347 | 0.0269 |
| CACNG6 | calcium voltage-gated channel auxiliary subunit gamma 6 | 0.50 | 1.42 | 0.000241 | 0.0346 |
| LAMTOR3 | late endosomal/lysosomal adaptor, MAPK and MTOR activator 3 | -0.61 | -1.53 | 0.001723 | 0.0018 |
| TNFRSF1A | TNF receptor superfamily member 1A | -0.53 | -1.44 | 0.004441 | 0.0279 |
| MKNK2 | MAPK interacting serine/threonine kinase 2 | -0.62 | -1.53 | 0.004473 | 0.0076 |
| TGFBR2 | transforming growth factor beta receptor 2 | -0.76 | -1.70 | 0.00594 | 0.0006 |
| IKBKB | inhibitor of nuclear factor kappa B kinase subunit beta | -0.46 | -1.37 | 0.006658 | 0.0283 |
| MAPKAPK5 | MAPK activated protein kinase 5 | -0.63 | -1.54 | 0.007019 | 0.0096 |
| PRKACA | protein kinase cAMP-activated catalytic subunit alpha | 0.31 | 1.24 | 0.012752 | 0.0263 |
| CACNA1H | calcium voltage-gated channel subunit alpha1 H | 0.39 | 1.31 | 0.016581 | 0.0001 |
| MAPK14 | mitogen-activated protein kinase 14 | -0.42 | -1.34 | 0.024777 | 0.0459 |
| AKT3 | AKT serine/threonine kinase 3 | -0.50 | -1.41 | 0.026523 | 0.0062 |
| CACNA2D1 | calcium voltage-gated channel auxiliary subunit alpha2delta 1 | 0.24 | 1.18 | 0.031604 | 0.0463 |
| FLNB | filamin B | -0.31 | -1.24 | 0.033218 | 0.0098 |
| GADD45G | growth arrest and DNA damage inducible gamma | -0.77 | -1.71 | 0.047004 | 0.0271 |

Supplementary Table S2. 'Adrenergic signaling in cardiomyocytes' pathway genes common between human and mouse

| Symbol | Name | logFC [Human] | Abs fold [Human] | adj.P.Val [Human] | Sample p(r) [Mouse] |
|--------|---|---------------|------------------|-------------------|---------------------|
| CREB5 | cAMP responsive element binding protein 5 | -0.85 | -1.80 | 0.002622 | 0.0199 |
| ADCY1 | adenylate cyclase 1 | 0.30 | 1.23 | 0.012066 | 0.0034 |

| | | | | | |
|----------|---|-------|-------|----------|--------|
| CACNG6 | calcium voltage-gated channel auxiliary subunit gamma 6 | 0.50 | 1.42 | 0.000241 | 0.0346 |
| PPP2CA | protein phosphatase 2 catalytic subunit alpha | -0.77 | -1.71 | 0.000408 | 0.1612 |
| CREB3L2 | cAMP responsive element binding protein 3 like 2 | 0.33 | 1.26 | 0.000678 | 0.0040 |
| ADCY7 | adenylylate cyclase 7 | 0.39 | 1.31 | 0.000871 | 0.0289 |
| ADCY8 | adenylylate cyclase 8 | 0.43 | 1.35 | 0.002981 | 0.0497 |
| ATP1B3 | ATPase Na+/K+ transporting subunit beta 3 | -0.48 | -1.39 | 0.008923 | 0.0294 |
| PRKACA | protein kinase cAMP-activated catalytic subunit alpha | 0.31 | 1.24 | 0.012752 | 0.0263 |
| ADCY2 | adenylylate cyclase 2 | -0.26 | -1.20 | 0.016076 | 0.0035 |
| MAPK14 | mitogen-activated protein kinase 14 | -0.42 | -1.34 | 0.024777 | 0.0459 |
| AKT3 | AKT serine/threonine kinase 3 | -0.50 | -1.41 | 0.026523 | 0.0062 |
| TPM4 | tropomyosin 4 | -0.70 | -1.63 | 0.031045 | 0.1457 |
| CACNA2D1 | calcium voltage-gated channel auxiliary subunit alpha2delta 1 | 0.24 | 1.18 | 0.031604 | 0.0463 |
| ADRA1A | adrenoceptor alpha 1A | -0.52 | -1.44 | 0.034298 | 0.0005 |
| AGTR1 | angiotensin II receptor type 1 | -0.79 | -1.72 | 0.009744 | 0.0274 |

Supplementary Table S3. 'Autophagy - animal' pathway genes common between human and mouse

| Symbol | Name | logFC [Human] | Abs fold [Human] | adj.P.Val [Human] | Sample p(r) [Mouse] |
|--------|---|---------------|------------------|-------------------|---------------------|
| RRAGC | Ras related GTP binding C | -0.61 | -1.53 | 0.000643 | 0.0434 |
| ATG10 | autophagy related 10 | 0.33 | 1.26 | 0.003734 | 0.0001 |
| PRKCQ | protein kinase C theta | 0.36 | 1.28 | 0.00735 | 0.0250 |
| PPP2CA | protein phosphatase 2 catalytic subunit alpha | -0.77 | -1.71 | 0.000408 | 0.1612 |
| WDR41 | WD repeat domain 41 | -0.56 | -1.48 | 0.00298 | 0.0309 |
| PRKACA | protein kinase cAMP-activated catalytic subunit alpha | 0.31 | 1.24 | 0.012752 | 0.0263 |
| AKT3 | AKT serine/threonine kinase 3 | -0.50 | -1.41 | 0.026523 | 0.0062 |
| CAMKK2 | calcium/calmodulin dependent protein kinase kinase 2 | 0.25 | 1.19 | 0.04589 | 0.0338 |
| HMGB1 | high mobility group box 1 | -0.47 | -1.38 | 0.049242 | 0.0143 |

Supplementary Table S4. 'Protein processing in endoplasmic reticulum' pathway genes common between human and mouse

| Symbol | Name | logFC [Human] | Abs fold [Human] | adj.P.Val [Human] | Sample p(r) [Mouse] |
|--------|------------------------------------|---------------|------------------|-------------------|---------------------|
| SSR3 | signal sequence receptor subunit 3 | -0.62 | -1.54 | 0.00921 | 0.0284 |
| CANX | calnexin | -0.59 | -1.51 | 0.021533 | 0.0057 |
| ATF6 | activating transcription factor 6 | -0.31 | -1.24 | 0.023509 | 0.0347 |

| | | | | | |
|--------|--|-------|-------|----------|--------|
| DERL1 | derlin 1 | -0.61 | -1.53 | 0.031392 | 0.2102 |
| UBE2G1 | ubiquitin conjugating enzyme E2 G1 | -0.67 | -1.59 | 0.0018 | 0.1310 |
| SEC61G | SEC61 translocon subunit gamma | -0.82 | -1.77 | 0.004346 | 0.0222 |
| PDIA3 | protein disulfide isomerase family A member 3 | -0.50 | -1.42 | 0.016309 | 0.0304 |
| PRKN | parkin RBR E3 ubiquitin protein ligase | 0.19 | 1.14 | 0.028373 | 0.0144 |
| CKAP4 | cytoskeleton associated protein 4 | 0.19 | 1.14 | 0.038451 | 0.0240 |
| STT3B | STT3 oligosaccharyltransferase complex catalytic subunit B | -0.35 | -1.28 | 0.040382 | 0.0172 |
| STT3A | STT3 oligosaccharyltransferase complex catalytic subunit A | -0.44 | -1.36 | 0.045837 | 0.0172 |

Supplementary Table S5. 'Focal adhesion' pathway genes common between human and mouse

| Symbol | Name | logFC [Human] | Abs fold [Human] | adj.P.Val [Human] | Sample p(r) [Mouse] |
|--------|--|---------------|------------------|-------------------|---------------------|
| FLT1 | fms related receptor tyrosine kinase 1 | -0.64 | -1.56 | 0.00006 | 0.04985 |
| EGFR | epidermal growth factor receptor | 0.49 | 1.40 | 0.00025 | 0.01033 |
| PARVA | parvin alpha | -0.54 | -1.46 | 0.00129 | 0.02801 |
| LAMA4 | laminin subunit alpha 4 | 0.52 | 1.43 | 0.00010 | 0.01558 |
| VWF | von Willebrand factor | 0.41 | 1.33 | 0.00130 | 0.00011 |
| COL1A1 | collagen type I alpha 1 chain | 0.35 | 1.27 | 0.00676 | 0.00110 |
| ZYX | zyxin | 0.54 | 1.45 | 0.01584 | 0.00144 |
| LAMA5 | laminin subunit alpha 5 | -0.33 | -1.26 | 0.01793 | 0.02276 |
| ACTN1 | actinin alpha 1 | 0.27 | 1.20 | 0.02479 | 0.00028 |
| AKT3 | AKT serine/threonine kinase 3 | -0.50 | -1.41 | 0.02652 | 0.00622 |
| FLNB | filamin B | -0.31 | -1.24 | 0.03322 | 0.00984 |
| TLN1 | talin 1 | -0.41 | -1.33 | 0.04639 | 0.01342 |

Supplementary Table S6. 'PI3K-Akt signaling' pathway genes common between human and mouse

| Symbol | Name | logFC [Human] | Abs fold [Human] | adj.P.Val [Human] | Sample p(r) [Mouse] |
|--------|--|---------------|------------------|-------------------|---------------------|
| CDK6 | cyclin dependent kinase 6 | -0.67 | -1.59 | 0.00003 | 0.02976 |
| FLT1 | fms related receptor tyrosine kinase 1 | -0.64 | -1.56 | 0.00006 | 0.04985 |
| EGFR | epidermal growth factor receptor | 0.49 | 1.40 | 0.00025 | 0.01033 |
| GNG4 | G protein subunit gamma 4 | 0.33 | 1.25 | 0.00056 | 0.02995 |
| CASP9 | caspase 9 | -0.46 | -1.38 | 0.00073 | 0.04546 |
| CREB5 | cAMP responsive element binding protein 5 | -0.85 | -1.80 | 0.00262 | 0.01987 |
| FGFR1 | fibroblast growth factor receptor 1 | -0.25 | -1.19 | 0.01276 | 0.00022 |
| MCL1 | MCL1 apoptosis regulator, BCL2 family member | -0.49 | -1.40 | 0.01944 | 0.04869 |

| | | | | | |
|---------|---|-------|-------|---------|---------|
| ERBB3 | erb-b2 receptor tyrosine kinase 3 | 0.33 | 1.25 | 0.03035 | 0.02686 |
| OSMR | oncostatin M receptor | -0.50 | -1.42 | 0.04204 | 0.00755 |
| LAMA4 | laminin subunit alpha 4 | 0.52 | 1.43 | 0.00010 | 0.01558 |
| PPP2CA | protein phosphatase 2 catalytic subunit alpha | -0.77 | -1.71 | 0.00041 | 0.03263 |
| YWHAZ | tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein zeta | -0.63 | -1.54 | 0.00062 | 0.01604 |
| CREB3L2 | cAMP responsive element binding protein 3 like 2 | 0.33 | 1.26 | 0.00068 | 0.00396 |
| VWF | von Willebrand factor | 0.41 | 1.33 | 0.00130 | 0.00011 |
| GNB1 | G protein subunit beta 1 | -0.48 | -1.39 | 0.00426 | 0.03153 |
| IKBKB | inhibitor of nuclear factor kappa B kinase subunit beta | -0.46 | -1.37 | 0.00666 | 0.02835 |
| COL1A1 | collagen type I alpha 1 chain | 0.35 | 1.27 | 0.00676 | 0.00110 |
| LAMA5 | laminin subunit alpha 5 | -0.33 | -1.26 | 0.01793 | 0.02276 |
| AKT3 | AKT serine/threonine kinase 3 | -0.50 | -1.41 | 0.02652 | 0.00622 |