

SUPPLEMENTAL MATERIAL

Table S1. Primer information.

Gene		Sequence (5'->3')
Slc41a3	Forward	CTCAGCCTTGAGTTCCGCTTT
	Reverse	GCAGGATAGGTATGGCGACC
Oxct1	Forward	GCCCTGCATAAAGGGTGTG
	Reverse	GCAAGGTTGCACCATTAGGAAT
Whrn	Forward	CAGACAGCATCCGCTAAGAAC
	Reverse	ACTTTTCTCACACGGACCAG
Lgals4	Forward	GGTCGTGGTGAACGGAAATTC
	Reverse	GTGGAGGGTTGTACCCAGGA
Lpin1	Forward	CCTCCGCTCCCGAGAGAAA
	Reverse	CGTTGTCTCCCAACTTCATGT
Pcx	Forward	AATGTCCGGCGTCTGGAGTA
	Reverse	ACGCACGAAACACTCGGAT
Wfs1	Forward	CAAACACTACCTACGCCTTGC
	Reverse	GCTGCCAGGATTAGCCAGG
C130080G10Rik	Forward	TGAGGATGCCATTGACAGG
	Reverse	GGGGTGAAAATGGGGTCTTGA
Slc25a34	Forward	ATGAAGCCAACCTCAGGCACAG
	Reverse	GCTGCAACAGAAGACACAAAG
Mfap4	Forward	GGCGTGTATCTCATCTACCCC
	Reverse	TCACTGAGCCGTTGAATCTTTT
Agrn	Forward	GCGGTA CTTGAAAGGCAAAGA
	Reverse	CTCCAAAGCCACCAATTACCA
Bckdhb	Forward	AGTGCCCTGGATAACTCATTAGC
	Reverse	GCATCGGAAGACTCCACCAAA
Tll1	Forward	GAAGTGGGTCACTGACATTGAG
	Reverse	ACGTTGCGAATGGTTTGCAC
Pdk4	Forward	AGGGAGGTTCGAGCTGTTCTC
	Reverse	GGAGTGTTCACTAAGCGGTCA
Ccng1	Forward	ACA ACTGACTCTCAGAACTGC
	Reverse	CATTATCATGGGCCGACTCAAT
Snai3	Forward	CACTGCCACAGGCCGTATC
	Reverse	CTTGCCGCACACCTTACAG
Lingo3	Forward	GTGGGCGACAATGACCTGG
	Reverse	ACAGTGATGTGAGATTGCAGC
Mtr	Forward	ATGATCCAGCGGTACAACTAAG
	Reverse	CATCCGGTAGGCCAAGTGTTT
Slc2a4	Forward	AACTGGTCCTAGCTGTATTCT
	Reverse	CCAGCCACGTTGCATTGTA
Txnip	Forward	GGCCGGACGGGTAATAGTG
	Reverse	AGCGCAAGTAGTCCAAAGTCT
Lgr6	Forward	ATCATGCTGTCCGCTGACTG

	Reverse	ACTGAGGTCTAGGTAAGCCGT
Atcayos	Forward	GGCTTTTCTTCTGACCTGGGA
	Reverse	TGTACCAGCACGGGTTCTTT
Ppm1k	Forward	TTATCAGCGGCCTTCATTACTTT
	Reverse	GGATGGAGCTTAACAACACTCTC
Per3	Forward	AACACGAAGACCGAAACAGAAT
	Reverse	CTCGGCTGGGAAATACTTTTTCA
Rab6b	Forward	AACCCGCTGCGAAAATTCAAG
	Reverse	CGGTCTTCCAAGTACATGGTTT
Lama5	Forward	CTGGCGGAGATCCCAATCAG
	Reverse	GTGTGACGTTGACCTCATTGT
Lpl	Forward	TTGCCCTAAGGACCCCTGAA
	Reverse	TTGAAGTGGCAGTTAGACACAG
Nrep	Forward	CCCCACCTCTGTTAGGGTA
	Reverse	AAAGCCTGCATTTTCGGCAG
Sntb1	Forward	AGCGGACTGCTGGAAGTTTT
	Reverse	GCAGAACGAACCATTGGTGG
Arntl	Forward	ACAGTCAGATTGAAAAGAGGCG
	Reverse	GCCATCCTTAGCACGGTGAG
Hspa5	Forward	ACTTGGGGACCACCTATTCTC
	Reverse	GTTGCCCTGATCGTTGGCTA
Scd1	Forward	TTCTTGCGATACTCTGGTGC
	Reverse	CGGGATTGAATGTTCTTGTCTG
Cmya5	Forward	CAGACAGCACTCTCCTGAGG
	Reverse	AGTGGTATAGACAGGTCTGTTGG
Gm36827	Forward	GGAGTCTGTGGAATGCAGGG
	Reverse	GGTCACATGGTTGCTCGGTA
Mest	Forward	AGAGTGGTGGGTCCAAGTAGG
	Reverse	AAGCACAACCTATCTCAGGGCT
Gsn	Forward	TCACGGGTGATGCCTATGTCA
	Reverse	AGCCAATAGTGGAGGTCATACTG
Acot2	Forward	GTTGTGCCAACAGGATTGGAA
	Reverse	GCTCAGCGTCGCATTTGTC
mt-Co3	Forward	TTAACCCTTGGCCTACTCACC
	Reverse	CAATAGGAGTGTGGTGGCCTT
Tubb4b	Forward	CACTTACCACGGAGATAGCGA
	Reverse	ACCTTCTGTGTAGTGCCCCTT
Tuba4a	Forward	ATGCGCGAGTGCATTTICAG
	Reverse	TCCACCAATGGTCTTATCGCT
Itga9	Forward	TGCTTTCAGTGTGACGAGA
	Reverse	TTAAAGGACACGTTGGCATCATA
Tuba8	Forward	ATCGGTCCATGTGGGTCAAG
	Reverse	TGAGTGCCAAAGGTTCCATCC
Inka2	Forward	GGGATGGCTTGCAGGATCAG

	Reverse	AGCTGTTCCAATGCCGTCTG
Appl2	Forward	ACTGGCAGACACTATGGTTCT
	Reverse	CTGGCAAGTCCAAAGAGATCC
Gas5	Forward	GGAAGCTGGATAACAGAGCGA
	Reverse	GGTATTCCTTGTAATGGGACCAC
Xdh	Forward	ATGACGAGGACAACGGTAGAT
	Reverse	TCATACTTGGAGATCATCACGGT
Rgma	Forward	CCACACCTCAGGACTTTCACA
	Reverse	AGACGGAAGTTCGTCCATTTC
2210407C18Rik	Forward	AAAGCCTCCTCACAGTTTTTGT
	Reverse	TCCATTTTCACACGTAGCTTGT
Myom2	Forward	ACCACCCAGTCATCCTCCC
	Reverse	CGTAAGAAGCCGCTTGAGACC
Ky	Forward	CTGCTGCAAAACCGAGGAG
	Reverse	GGTTGTCGTAGGAGGTGATGA
Shld1	Forward	GTGTGACACCAGCAGTTATGA
	Reverse	AGCCAGAAGTTCTCAGAGTCC
Cyp1a1	Forward	CAATGAGTTTGGGGAGGTTACTG
	Reverse	CCCTTCTCAAATGTCCTGTAGTG
Actc1	Forward	CTGGATTCTGGCGATGGTGTA
	Reverse	CGGACAATTTACGTTTCAGCA
Plcd3	Forward	GGCTACGGGCACTGAAGAAG
	Reverse	GCTGCACGAAGAATATGTGCTT
Adam19	Forward	CTCCGCTACAGCATGAACTCA
	Reverse	GCAAAAAGGTGCTCGTTCTTC
Ntsr2	Forward	CGCGCTCTATTCGCTCATCTT
	Reverse	CACAGCTCACGCACGAAGTAA
Egln3	Forward	AGGCAATGGTGGCTTGCTATC
	Reverse	GCGTCCCAATTCTTATTCAGGT

Table S2. Reagents.

Name	Company	Catalog No.
Triton X-100	Sigma-Aldrich	T9284
NaCl	Sigma-Aldrich	S7653
KCl	Sigma-Aldrich	P9541
MgCl ₂	Sigma-Aldrich	M8266
CaCl ₂	Sigma-Aldrich	C1016
Glucose	Sigma-Aldrich	G8270
HEPES	Sigma-Aldrich	PHR1428
NaH ₂ PO ₄	Sigma-Aldrich	S8282
BDM	Sigma-Aldrich	B0753
Taurine	Sigma-Aldrich	T8691
EDTA	Sigma-Aldrich	EDS
MgCl ₂	Sigma-Aldrich	M8266
Glutaraldehyde	Sigma-Aldrich	G5882
Collagenase 2	Worthington	LS004176
laminin	Thermo Scientific,	23017-15
Rhod-4AM	AAT bioquest	21121
MM4-64	AAT bioquest	21487
MitoTracker	ThermoFisher Scientific	M7512
Hematoxylin and eosin Kit	Beyotime biotech	C0105M
TUNEL Kit	Beyotime biotech	C1089
HBSS	ThermoFisher Scientific, Pittsburgh, PA, USA	14175103
DNase	Worthington, Lakewood, NJ, USA	9003-98-9
RNase	Worthington, Lakewood, NJ, USA	9001-99-4
BCA kit	ThermoFisher Scientific	A53227
paraformaldehyde(PFA)	Sigma-Aldrich	158127
4',6-diamidino-2-phenylindole(DAPI)	ThermoFisher Scientific)	D3571
PureLink RNA Micro Scale Kit	Life Technologies, Carlsbad, California, USA	12183016
PrimeScript TM reagent kit	Takara Bio, Kusatsu, Japan	RR037A
SYBR Green Power Premix Kits	Applied Biosystems, Foster City, California	4368577
RIPA lysis buffer	Beyotime, Shanghai, China	P0013B
NEB Next [®] Ultra TM RNA Library Prep Kit	NEB, USA	E7760
TruSeq PE Cluster Kit	Illumina	v3-cBot-HS

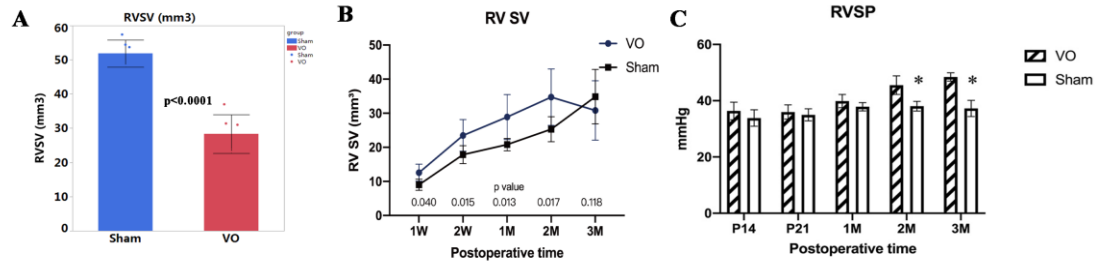
Table S3. Antibodies.

Name	Company	Catalog No.
cardiac troponin T	Abcam	ab8295
sarcomeric α -actinin	Abcam	ab9465
Ki67	Abcam	ab15580
phosphorylated histone H3	Milipore	06-570
aurora B	Abcam	ab2254
GAPDH	Abcam	ab8245
Dylight 800- labeled affinity secondary antibodies	Kirkegaard & Perry Laboratories, Gaithersburg, MD	072-07-15-06

Table S4. PA diameter (D) at P14 and P21.

	N	VO	Sham	<i>p</i>
P14	6	0.777±0.052	0.76±0.079	0.704
P21	6	0.962±0.090	0.95±0.060	0.713

Figure S1. RVSV and RVSP at different time points.



(A) RVSV was significantly reduced at 12 months after surgery. $P < 0.0001$, $n = 6$ mice, student t -test. (B) Changes in RVSV over time, $n = 6$ mice, student t -test. (C) Histogram of RVSP in different time points, $n = 6$ mice, Student's t -test.

Supplemental Video Legend:

Video S1. Surgical process of VO. Best viewed with Windows Media Player.