

## Major Resources Table

In order to allow validation and replication of experiments, all essential research materials listed in the Methods should be included in the Major Resources Table below. Authors are encouraged to use public repositories for protocols, data, code, and other materials and provide persistent identifiers and/or links to repositories when available. Authors may add or delete rows as needed.

### Genetically Modified Animals

	Species	Vendor or Source	Background Strain	Other Information	Persistent ID / URL
Parent	<i>A1cf<sup>Tg</sup>(Myh6-cre/Esr1*)1Jmk</i>	The Jackson Laboratory	C57BL/6J		MGI:3050453
Parent	<i>Tjp1<sup>tm2c(KOMP)Wtsi</sup></i>	Jerrold Turner	C57BL/6		MGI:6272009
Parent	<i>Hcn4<sup>tm2.1(cre/ERT2)Sev</sup></i>	Sylvia Evans	C57BL/6		MGI:5529675
Parent	<i>Tg(Kcne1-cre/ERT2)1I mos</i>	Ivan Moskowitz	C57BL/6		MGI:5301931

### Antibodies

Target antigen	Vendor or Source	Catalog #	Working concentration	Persistent ID / URL
ZO-1	Thermo Fisher	339100	1:1000 for western blot 1:500 for IF	<a href="https://www.thermofisher.com/antibody/product/ZO-1-Antibody-clone-ZO1-1A12-Monoclonal/33-9100">https://www.thermofisher.com/antibody/product/ZO-1-Antibody-clone-ZO1-1A12-Monoclonal/33-9100</a>
CAR	Santa Cruz Biotechnology	sc-373791	1:300 for western blot 1:200 for IF	<a href="https://www.scbt.com/p/car-antibody-e-1">https://www.scbt.com/p/car-antibody-e-1</a>
Cx40	Thermo Fisher	37-8900	1:300 for western blot 1:200 for IF	<a href="https://www.thermofisher.com/antibody/product/Connexin-40-Antibody-clone-2F9A11-Monoclonal/37-8900">https://www.thermofisher.com/antibody/product/Connexin-40-Antibody-clone-2F9A11-Monoclonal/37-8900</a>
β-catenin	Cell Signaling Technology	9562	1:300 for western blot 1:250 for IF	<a href="https://www.cellsignal.com/products/primary-antibodies/b-catenin-antibody/9562">https://www.cellsignal.com/products/primary-antibodies/b-catenin-antibody/9562</a>
HCN4	Abcam	ab32675	1:300 for western blot	<a href="https://www.abcam.com/hcn4-antibody-shg-1e5-ab32675.html">https://www.abcam.com/hcn4-antibody-shg-1e5-ab32675.html</a>
mouse IgG (HRP)	Cell Signaling Technology	7076	1:1000 for western blot	<a href="https://www.cellsignal.com/products/secondary-antibodies/anti-mouse-igg-hrp-linked-antibody/7076">https://www.cellsignal.com/products/secondary-antibodies/anti-mouse-igg-hrp-linked-antibody/7076</a>
rat IgG (HRP)	Cell Signaling Technology	7077	1:1000 for western blot	<a href="https://www.cellsignal.com/products/secondary-antibodies/anti-rat-igg-hrp-linked-antibody/7077">https://www.cellsignal.com/products/secondary-antibodies/anti-rat-igg-hrp-linked-antibody/7077</a>
rabbit IgG (HRP)	Cell Signaling Technology	7074	1:1000 for western blot	<a href="https://www.cellsignal.com/products/secondary-antibodies/anti-rabbit-igg-hrp-linked-antibody/7074">https://www.cellsignal.com/products/secondary-antibodies/anti-rabbit-igg-hrp-linked-antibody/7074</a>
ZO-2	Thermo Fisher	71-1400	1:200	<a href="https://www.thermofisher.com/antibody/product/ZO-2-Antibody-Polyclonal/71-1400">https://www.thermofisher.com/antibody/product/ZO-2-Antibody-Polyclonal/71-1400</a>
Cx43	Cell signaling technology	3512	1:250	<a href="https://www.cellsignal.com/products/primary-antibodies/connexin-43-antibody/3512">https://www.cellsignal.com/products/primary-antibodies/connexin-43-antibody/3512</a>
JUP	Abcam	ab11799	1:250	<a href="https://www.abcam.com/gamma-catenin-antibody-ab11799.html">https://www.abcam.com/gamma-catenin-antibody-ab11799.html</a>
Nav1.5	Abcam	ab56240	1:250	<a href="https://www.abcam.com/nav15scn5a-antibody-ab56240.html">https://www.abcam.com/nav15scn5a-antibody-ab56240.html</a>
N-cadherin	Thermo Fisher	333900	1:250	<a href="https://www.thermofisher.com/antibody/product/N-cadherin-Antibody-clone-3B9-Monoclonal/33-3900">https://www.thermofisher.com/antibody/product/N-cadherin-Antibody-clone-3B9-Monoclonal/33-3900</a>
Cx45	Thermo Fisher	PA5-	1:250	<a href="https://www.thermofisher.com/antibody/product/Connexin-45-Antibody-clone-PA5-Monoclonal/33-3900">https://www.thermofisher.com/antibody/product/Connexin-45-Antibody-clone-PA5-Monoclonal/33-3900</a>

DOI [to be added]

		77357		<a href="http://www.angioproteomie.com/commerce/ccp1141-rat-monoclonal-anti-mouse-pecam-1-map-0032.htm">xin-45-Antibody-Polyclonal/PA5-77357</a>
CD31	Antio-Proteomie	mAP-0032	1:250	<a href="http://www.angioproteomie.com/commerce/ccp1141-rat-monoclonal-anti-mouse-pecam-1-map-0032.htm">http://www.angioproteomie.com/commerce/ccp1141-rat-monoclonal-anti-mouse-pecam-1-map-0032.htm</a>
Mouse IgG	Jackson Immuno Research Laboratories	711-586-152	1:1000	<a href="https://www.jacksonimmuno.com/catalog/products/711-586-152">https://www.jacksonimmuno.com/catalog/products/711-586-152</a>
Rabbit IgG	Jackson Immuno Research Laboratories	715-546-151	1:1000	<a href="https://www.jacksonimmuno.com/catalog/products/715-546-151">https://www.jacksonimmuno.com/catalog/products/715-546-151</a>
GAPDH	Cell Signaling Technology	5174	1:1000	<a href="https://www.cellsignal.com/products/primary-antibodies/gapdh-d16h11-xp-rabbit-mab/5174">https://www.cellsignal.com/products/primary-antibodies/gapdh-d16h11-xp-rabbit-mab/5174</a>

### DNA/cDNA Clones

Clone Name	Sequence	Source / Repository	Persistent ID / URL

### Data & Code Availability

Description	Source / Repository	Persistent ID / URL

### Other

Description	Source / Repository	Persistent ID /AI URL
Alexa Fluor 647-phalloidin	Thermo Fisher	<a href="https://www.thermofisher.com/order/catalog/product/A22287#/A22287">https://www.thermofisher.com/order/catalog/product/A22287#/A22287</a>
Hoechst 33342	Thermo Fisher	<a href="https://www.thermofisher.com/order/catalog/product/62249?SID=srch-srp-62249#/62249?SID=srch-srp-62249">https://www.thermofisher.com/order/catalog/product/62249?SID=srch-srp-62249#/62249?SID=srch-srp-62249</a>