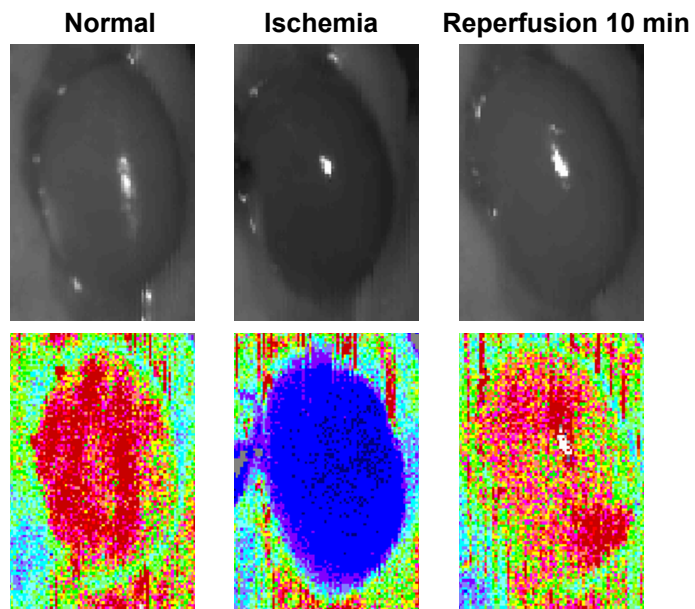


## **Supplemental figure legends**

**Supplemental figure 1. Kidney blood flow.** Representative images of kidney blood flow before, during and after (10 min) kidney ischemia/reperfusion injury.

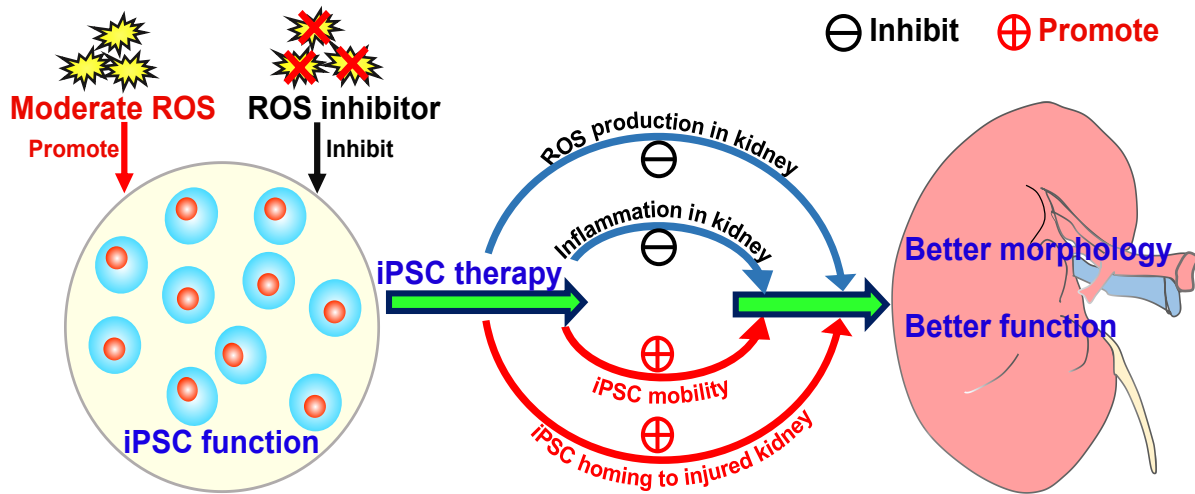
**Supplemental figure 2. Graphical abstract.** Intracellular ROS are necessary for iPSCs to engraft and treat IRI injured kidney. Moderate increases in intracellular ROS promote iPSC engraftment and the ensuing therapeutic function.

## Supplemental Figure 1



**Kidney blood flow.** Representative images of kidney blood flow before, during and after (10 min) kidney ischemia/reperfusion injury.

## Supplemental Figure 2



**Graphical abstract.** Intracellular ROS are necessary for iPSCs to engraft and treat IRI injured kidney. Moderate increases in intracellular ROS promote iPSC engraftment and the ensuing therapeutic function.

**Supplemental Table 1 . Detailed information on primer sequences and key resources**

Primers		Primer pair sequences	Amplicon size
IL-1 β (mouse)	forward	TGCCACCTTTTGACAGTGATG	220 bp
	reverse	AAGGTCCACGGGAAAGACAC	
CXCL-1 (mouse)	forward	ACCGAAGTCATAGCCACACTC	113 bp
	reverse	CTCCGTTACTTGGGGACACC	
IL-6 (mouse)	forward	GCCTTCTTGGGACTGATGCT	181 bp
	reverse	TGCCATTGCACAACTCTTTTCT	
MCP-1 (mouse)	forward	AGCTGGAGCTGAGGAGATTA	100 bp
	reverse	GTCCTCAGAACCTCTGTCCG	
TNF-α (mouse)	forward	CCCTCACACTCACAAACCAC	133 bp
	reverse	ACAAGGTACAACCCATCGGC	
IL-10 (mouse)	forward	GGTTGCCAAGCCTTATCGGA	159 bp
	reverse	GGGGAGAAATCGATGACAGC	
GAPDH (mouse)	forward	GTATTGGGCGCCTGGTC	201bp
	reverse	GCTCCTGGAAGATGGTGATG	
Tet-on	forward	AGCACAACTACGCCGCACCC	402bp
	reverse	ATGCACCAGAGTTTCGAAGC	
18s (mouse)	forward	GAGAAACGGCTACCACATCC	170 bp
	reverse	CACCAGACTTGCCCTCCA	
Chemicals	Source		Identifier
Creatinine assay kit	Jiancheng Bioengineering Institute, Nanjing, China		Cat#C011-1-1
BUN assay kit	Jiancheng Bioengineering Institute, Nanjing, China		Cat#C013-2-1
Non-traumatic microvessel clamp	S&T AG, Neuhausen, Switzerland		Size B-1 V
Optimum cutting temperature compound (OCT)	Sakura Finetek Inc., Tokyo, Japan		Cat#4583
Dihydroethidium	Beyotime Biotechnology Inc., Shanghai, China		Cat#S0063

Cell counting kit-8	Dojindo Molecular Technologies Inc., Shanghai, China	Cat#LC617
Mounting medium, anti-fading	Solarbio Science & Technology Ltd, Beijing, China	Cat#S2100
Hydrogen peroxide solution	Sigma-Aldrich Co., Saint Louis, MO, USA	Cat#323381
Trypsin-ethylene diamine tetraacetic acid	Sigma-Aldrich Co., Saint Louis, MO, USA	Cat#T4049
N-acetylcysteine	Sigma-Aldrich Co., Saint Louis, MO, USA	Cat#BP907
PKH26 red fluorescent cell linker kit	Sigma-Aldrich Co., Saint Louis, MO, USA	Cat#MIDI26
Fetal bovine serum	Thermo Fisher Scientific Inc., MA, USA	Cat#10100147
Matrigel	BD Biosciences Inc., San Jose, USA	Cat#354277
Transwell	Corning Inc., NY, USA	Cat#3464, Cat#3401
Sucrose	Sinopharm Chemical Reagent Ltd, Shanghai, China	Cat#10021418
SYBR Green PCR Master Mix	Thermo Fisher Scientific Inc., MA, USA	Cat#4309155
Paraformaldehyde	Sigma-Aldrich Co., Saint Louis, MO, USA	Cat#158127
Gelatin	Sigma-Aldrich Co., Saint Louis, MO, USA	Cat#V900863
Dulbecco's modified Eagle's medium	Thermo Fisher Scientific Inc., MA, USA	Cat#10565018
L-Glutamine	Thermo Fisher Scientific Inc., MA, USA	Cat#25030081
Sodium pyruvate	Thermo Fisher Scientific Inc., MA, USA	Cat#11360070
Non-essential amino acids	Thermo Fisher Scientific Inc., MA, USA	Cat#11140050
$\beta$ -Mercaptoethanol	Sigma-Aldrich Co., Saint Louis, MO, USA	Cat#97622-10ML
Leukemia inhibitory factor	Merck Millipore Ltd., Darmstadt, Germany.	Cat#LIF2005
Penicillin- streptomycin	Thermo Fisher Scientific Inc., MA, USA	Cat#15140163

Pentobarbital sodium	Sigma-Aldrich Co., Saint Louis, MO, USA	Cat#P3761
DreamTaq Green PCR Master Mix	Thermo Fisher Scientific Inc., MA, USA	Cat#K1082
TRIzol Reagent	Thermo Fisher Scientific Inc., MA, USA	Cat#15596026
DNAzol™ Reagent	Thermo Fisher Scientific Inc., MA, USA	Cat#10503027
Monoclonal anti-aquaporin 1	Abcam Inc., Cambridge, UK	ab-9566
Monoclonal calbindin D28K	SantaCruz Biotechnology Inc., CA, USA	sc-365360
Agilent Seahorse XF cell Mitochondrial stress test kit	Agilent Technologies Inc., Santa Clara, CA,US	103015-100
<b>Animals</b>	<b>Organisms/Strains</b>	
Mouse: C57BL/6	Shanghai Laboratory Animal Ltd, Shanghai, China	
<b>Instruments</b>	<b>Source</b>	<b>Model</b>
Freezing microtome	Leica Biosystems, Wetzlar, Germany	CM1950
Microplate reader	BioTek Instruments Inc., Winooski, VT, USA	Synergy H1
CFX96™ Real-Time system	Bio-Rad Laboratories Inc., Berkeley, CA, USA	CFX96™ Optics Module
Tanon 3500 gel imaging system	Tanon Science & Technology Ltd, Shanghai, China	Tanon 3500
TissueLyzer	JingXin Industrial Development Ltd, Shanghai, China	JXFSTPRP-24
Fluorescence microscope	Leica Microsystems, Wetzlar, Germany	DMi8
MoorLDI2-2 laser doppler imaging system	Moor Instruments Ltd., Devon, UK	MoorLDI2-HIR
Transdermal GFR	NIC-Kidney, Mannheim Pharma & Diagnostics	SN:UD1211

monitor	GmbgH, Mannheim, Germany	
F96 extracellular flux analyzer	Agilent Technologies Inc, CA, USA	Seahorse XFe/XF