

Supplemental Table S1 primer sequences

Gene	forward primer	reverse primer
Ki67	5'- ACTTCCCATGTCTCCAAGG -3'	5'- GCAGTGGTATCAACGCAGAG - 3' 5'- GGCATGGACTGTGGTCATGAG -
GAPDH	5'- TGCACCACCAACTGCTTAGC - 3'	3'
Cyclin D2	5'- GCAAATGTGTACGTGCATGC - 3' 5'- GAACGTGAAAAAGAAAAGTCTCG	5'- CCGATGATTTGCTGGGGATG - 3' 5'- CCTTATCAAGATGCGAACTCACA -
HIF1A	- 3'	3'
AURKB	5'-CAGTGGGACACCCGACATC-3' 5'-	5'-GTACACGTTTCCAAACTTGCC-3'
mitochondrial DNA minimal arc	GCTGGGTAGCTCTAAACAATGTATTC A-3' 5'-	5'-CCATGT ACTAACAAATGTCTAAAATGGT-3'
nuclear DNA within the beta-2M gene	GCTGGGTAGCTCTAAACAATGTATTC A-3'	5'-AGAGCTCCCGTGAGTGGTTA-3'

Supplemental Table S2 Reagent and antibodies

Name	Cat#	company
WGA	MP00831	Life Technologies
anti-troponin T	ab8295	Abcam
anti-mouse secondary antibodies	ab150107	Abcam
anti-Ki67	ab154201	Abcam
anti-8-oxoG	ab64548	Abcam
anti-rabbit secondary antibody	4409	CST
iPS Cell Lines	del-AR1034ZIMA 001	allelebiotech
STEMdiff Cardiomyocyte Differentiation Kit		STEMCELL Technologies, Vancouver, British Columbia, Canada
anti-sarcomeric $\alpha$ -actinin	ab9465	Abcam
YAP1 complementary DNA (cDNA)		Genechem, Shanghai, China
YAP1 shRNA		Genechem, Shanghai, China
negative control (NC) lentiviral vector		Genechem, Shanghai, China
DAPI	R37606	life technologies
anti-aurora B	ab2254	Abcam
PrimeScript <sup>TM</sup> reagent kit	RR037A	Takara Bio, Kusatsu, Japan
PureLink RNA Micro Scale Kit	12183016	Life Technologies, Carlsbad, California, USA
SYBR Green Power Premix Kits	4368577	Applied Biosystems, Foster City, California
RIPA Lysis Buffer	P0013B	Beyotime, Shanghai, China
anti-pATM	ab81292	Abcam
anti-Pitx2	sc-390457	SANTA CRUZ BIOTECHNOLOGY, Shanghai, China
anti-phospho-histone H3	06-570	Milipore
anti-YAP1	ab52771	Abcam



Supplemental Table S3 patient's clinical information

group	sample number	age	sex	SaO <sub>2</sub> (%)	PAH(mmHg)	Previous surgical treatment
Group A (severe hypoxia)	1	4.2	male	69	87	no
	2	4.5	male	73	77	no
	3	4	male	73	65	no
	4	4.1	male	71	88	no
	5	3.9	female	68	65	no
	6	4	female	69	70	no
	7	3.8	female	73	72	no
	8	4.4	female	71	92	no
	9	4.6	female	69	90	no
	10	4.4	male	70	67	no
	Average	4.2	-	70.6	77.3	-
	SD	0.3	-	1.9	10.9	-
Group B (moderate hypoxia)	11	4	female	85	95	no
	12	5	female	84	64	no
	13	4.1	female	84	97	no
	14	3	female	84	67	no
	15	3.5	male	82	98	no
	16	4.2	male	82	72	no
	17	3.6	male	78	89	no
	18	4.3	male	78	63	no
	19	3.7	male	77	65	no
	20	4.4	male	76	70	no
	Average	4.0	-	81.0	78.0	-
	SD	0.6	-	3.4	14.8	-
Group C (mild hypoxia)	21	3.8	female	91.4	85	no
	22	4	female	88	85	no
	23	3.5	male	90	70	no
	24	5	male	88	65	no
	25	3.4	male	88	70	no
	26	3.2	male	88	63	no
	27	3.3	male	89	68	no
	28	4.1	male	90	64	no
	29	4.2	female	91	67	no
	30	3.7	female	87	72	no
	Average	3.8	-	89.0	70.9	-
	SD	0.5	-	1.5	8.0	-
<i>P</i>		<i>0.733</i>	<i>0.873</i>	<i>&lt;0.001</i>	<i>0.444</i>	

Supplemental Figure S1 HIF1A mRNA relative expression.

