

Targeted inhibition of Focal Adhesion Kinase Attenuates Cardiac
Fibrosis and Preserves Heart Function in Adverse Cardiac Remodeling

Jie Zhang¹, Guangpu Fan², Hui Zhao¹, Zhiwei Wang¹, Fei Li¹, Peide
Zhang¹, Jing Zhang¹, Xu Wang¹, Wei Wang^{1*}

Supplementary Information

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Supplementary table S2 the dilute concentration of the antibody used in this study

	Purchased from	Description	Dilution
Collagen I	Abcam(34710)	Rabbit/ polyclonal	WB 1:1000 IHC 1:1500 IF 1:200
Collagen III	Abcam(7778)	Rabbit/ polyclonal	IHC 1:500 IF 1:200
Fibronectin	Abcam(2413)	Rabbit/ polyclonal	WB 1:1000 IHC 1:500 IF 1:150
Elastin	Abcam(21610)	Rabbit/ polyclonal	IHC 1:500 IF 1:200
p-FAK	Abcam(81298)	Rabbit/ monoclonal	IF 1:200
p-FAK	CST(3283)	Rabbit/ polyclonal	WB 1:1000
FAK	CST(3285)	Rabbit/ polyclonal	IHC 1:100 WB 1:1000
Vimentin	Abcam(8978)	Mouse/ monoclonal	IF: 1:200
Vimentin	Abcam(92547)	Rabbit/ polyclonal	WB 1:1000
α -SMA	Abcam(5694)	Rabbit/ polyclonal	WB 1:1000
α -SMA	Abcam(7817)	Mouse/ monoclonal	WB 1:200
LOX	Abcam(31238)	Rabbit/ polyclonal	WB 1:500
t-P70/S6K	CST (9234s)	Rabbit/ polyclonal	WB 1:1000
p-P70/S6K	CST (2708s)	Rabbit/ polyclonal	WB 1:1000
p-AKT	CST (4060s)	Rabbit/ polyclonal	WB 1:1000
t-AKT	CST (4691s)	Rabbit/ polyclonal	WB 1:1000
p-mTOR	CST (2974p)	Rabbit/ polyclonal	WB 1:1000
t-mTOR	CST (2983p)	Rabbit/ polyclonal	WB 1:1000
p-ERK1/2	CST (4377)	Rabbit/ polyclonal	WB 1:1000
t-ERK1/2	CST (4695)	Rabbit/ polyclonal	WB 1:1000
GAPDH	ZSGB-BIO(TA336621)	mouse/ monoclonal	WB 1:1000
Anti-Rabbit IgG H&L (Alexa Fluor® 488)	Abcam (150077)	Goat/ Polyclonal	IF 1:400
Alexa Fluor® 488 AffiniPure Goat Anti-Mouse IgG (H+L)	Jackson(115545003)	Goat/ Polyclonal	IF 1:400
Alexa Fluor® 594 AffiniPure Goat Anti-Rabbit IgG (H+L)	Jackson(111585003)	Goat/ Polyclonal	IF 1:400

Supplementary table S2 : Primer sequences and product sizes for predicted genes

Gene	Primer	Sequence (5' to 3')	Length
FAK	Forward	GGCTGTCATCGAGATGTCCA	114bp
	Reverse	TTCATCCACCGTGGCTAGT	
Vimentin	Forward	ATTTCTCTGCCTCTGCCAAC	113bp
	Reverse	CAACCGTCTTAATCAGGAGTGT	
α-SMA	Forward	TACCACCATGTACCCAGGCA	152bp
	Reverse	GAAGGTAGACAGCGAAGCCA	
cta	Forward	GACGAGATGGCATCCCTG	141bp
	Reverse	CACGGAAACTCCAGCTGATT	
LOX	Forward	CCACAGCATGGACGAATTCA	191bp
	Reverse	GTCTGCCGCATAGGTGTCAT	
Fibronectin	Forward	ACATGTCAGACCTGCCTTGG	121bp
	Reverse	GGTGAGATTGAAGTGGGAGC	
Laminin	Forward	TGTGAGCTGTGTGCTTCTGG	139bp
	Reverse	GCACCGGAAATCACTGTCAC	
Elastin	Forward	CTAAAGCAGCCGCCAAAG	150bp
	Reverse	AGGACCAGCTCCAATACCAG	
β-actin	Forward	ACTCATCGTACTCCTGCTTGCT	130bp
	Reverse	GCTAGGCATTTCCATCTTCA	

Supplementary table S3 Echocardiographic analysis at the 7th day after MI

	Sham	Sham +PF	MI	MI+PF
LVEF	68.82±2.15	67.73±2.30	48.05±1.74*	43.96±1.40 [#]
FS	38.25±1.66	37.64±1.73	24.26±1.06*	21.99±0.81 [#]
LV mass	152.93±9.08	175.49±10.27	143.04±10.12	167.44±14.64
LV mass (correct)	122.34±7.26	140.39±8.21	114.43±8.09	133.95±11.72
LV Vol; d	73.72 ±7.02	88.34 ±5.67	105.72 ±3.41*	138.64 ±6.70 [#]
LV Vol; s	23.34±3.57	28.92±3.54	55.10±3.06*	78.21±5.17 [#]
LVAW,s	1.61±0.05	1.71±0.06	0.87±0.11*	0.67±0.13
LVAW, d	1.01±0.04	1.07±0.04	0.67±0.07*	0.51±0.09
LVID, d	4.07±0.16	4.40±0.12	4.76±0.06*	5.34±0.11 [#]
LVID,s	2.52±0.14	2.75±0.14	3.61±0.08*	4.17±0.12 [#]
LVPW, d.	0.89±0.03	0.84±0.04	0.81±0.03	0.92±0.06
LVPW,s	1.38±0.07	1.28±0.08	1.25±0.04	1.46±0.07 [#]

Table 3. Echocardiographic analysis at the 7th day after MI model were established, Values are means ± SEM of three separate M-mode measurements. LVEF: left ventricular ejection fraction; FS: fractional shortening; LV mass : left ventricular mass; LV Vol; s: systolic left ventricular volume; LV Vol;d :diastolic left ventricular volume; LVAW,s : systolic left ventricular anterior wall; LVAW,d: diastolic left ventricular posterior wall; LVID,d: diastolic left ventricular internal dimension; LVID,s : systolic left ventricular internal dimension; LVPW,d: diastolic left ventricular posterior wall; LVPW,s: systolic left ventricular posterior wall.* p<0.05 vs. Sham & Sham+PF; [#]P< 0.05 vs. MI.

Supplementary table S4 Echocardiographic analysis at the first month after treatment

	Sham	Sham +PF	MI	MI+PF
LVEF	68.48±3.80	65.84±2.34	18.89±1.33*	27.87±1.31 [#]
FS	38.26±3.12	36.08±1.78	8.73±0.64*	13.21±0.67 [#]
LV mass	160.07±12.60	166.37±7.03	155.18±20.37	193.88±19.59
LV mass (correct)	128.06±10.08	133.10±5.63	126.31±15.88	155.10±15.67
LV Vol; d	67.70±7.31	81.62±5.67	179.54±17.29*	162.46±7.88
LV Vol; s	22.23±4.56	27.87±2.57	146.01±14.80*	117.51±6.79 [#]
LVAW,s	1.72±0.11	1.64±0.06	0.49±0.04*	0.45±0.07 [#]
LVAW, d	1.16±0.07	1.06±0.06	0.41±0.03*	0.40±0.07
LVID, d	3.92±0.18	4.26±0.13	5.94±0.25*	5.72±0.12
LVID,s	2.43±0.21	2.72±0.11	5.42±0.24*	4.97±0.13
LVPW, d.	0.88±0.07	0.86±0.04	0.70±0.06*	1.07±0.10 [#]
LVPW,s	1.33±0.10	1.39±0.05	1.00±0.10*	1.40±0.10 [#]

Table 1. Echocardiographic analysis at the first month after implantation of the ALZET mini-osmotic pump, Values are means ± SEM of three separate M-mode measurements. LVEF: left ventricular ejection fraction; FS: fractional shortening; LV mass : left ventricular mass; LV Vol; s: systolic left ventricular volume; LV Vol;d :diastolic left ventricular volume; LVAW,s : systolic left ventricular anterior wall; LVAW,d: diastolic left ventricular posterior wall; LVID,d: diastolic left ventricular internal dimension; LVID,s : systolic left ventricular internal dimension;LVPW,d: diastolic left ventricular posterior wall; LVPW,s: systolic left ventricular posterior wall.* p<0.05 vs. Sham & Sham+PF; [#]P< 0.05 vs. MI.

Supplementary table S5 Echocardiographic analysis at the second month after treatment

	Sham	Sham +PF	MI	MI+PF
LVEF	70.48±2.12	75.52±2.08	15.26±2.21*	22.22±2.10 [#]
FS	39.48±1.58	43.90±71	7.03±1.06*	10.39±1.04 [#]
LV mass	161.11±19.19	174.51±12.26	170.62±17.86	144.38±19.24
LV mass (correct)	128.89±15.35	139.61±9.81	136.49±14.29	115.50±15.39
LV Vol; d	68.19±7.46	68.32±68.32	194.65±12.14*	171.30±14.64
LV Vol; s	20.77±3.78	17.07±2.61	165.85±13.13*	133.56±11.99 [#]
LVAW,s	1.55±0.06	1.91±0.06	0.37±0.04*	0.39±0.04
LVAW, d	1.02±0.05	1.19±0.05	0.34±0.05*	0.36±0.03
LVID, d	3.93±0.18	3.65±0.41	6.19±0.16*	5.83±0.22
LVID,s	2.39±0.17	2.22±0.13	5.76±0.19*	5.22±0.21 [#]
LVPW, d.	1.01±0.07	0.96±0.04	0.84±0.10	0.73±0.08
LVPW,s	1.56±0.09	1.53±0.03	1.06±0.12*	0.98±0.12

Table 1. Echocardiographic analysis at the second month after implantation of the ALZET mini-osmotic pump, Values are means ± SEM of three separate M-mode measurements. LVEF: left ventricular ejection fraction; FS: fractional shortening; LV mass : left ventricular mass; LV Vol; s: systolic left ventricular volume; LV Vol;d :diastolic left ventricular volume; LVAW,s : systolic left ventricular anterior wall; LVAW,d: diastolic left ventricular posterior wall; LVID,d: diastolic left ventricular internal dimension; LVID,s : systolic left ventricular internal dimension;LVPW,d: diastolic left ventricular posterior wall; LVPW,s: systolic left ventricular posterior wall.* p<0.05 vs. Sham & Sham+PF; [#]P< 0.05 vs. MI.

Supplementary table S6 Echocardiographic analysis at the third month after treatment

	Sham	Sham +PF	MI	MI+PF
LVEF	68.93±2.67	71.43±4.66	12.42±0.88*	22.30±1.62 [#]
FS	38.44±2.06	41.05±3.71	5.67±0.41*	10.58±0.74 [#]
LV mass	159.48±3.72	160.88±18.07	154.04±23.37	155.95±11.11
LV mass (correct)	127.59±10.97	128.70±14.46	123.23±18.70	124.76±8.89
LV Vol; d	73.90±5.73	73.17±6.45	223.66±13.28*	158.73±0.62 [#]
LV Vol; s	23.11±2.82	21.83±4.69	196.45±13.05*	123.72±10.43 [#]
LVAW,s	1.56±0.11	1.70±0.09	0.29±0.05*	0.42±0.07
LVAW, d	1.03±0.05	1.09±0.07	0.27±0.04*	0.38±0.05
LVID, d	4.08±0.13	4.06±0.15	6.58±0.18*	5.66±0.16 [#]
LVID,s	2.51±0.12	2.41±0.22	6.21±0.19*	5.07±0.18 [#]
LVPW, d.	0.91±0.04	0.86±0.06	0.70±0.11	0.87±0.07
LVPW,s	1.45±0.06	1.39±0.08	0.82±0.12*	1.12±0.09 [#]

Table 1. Echocardiographic analysis at the third month after implantation of the ALZET mini-osmotic pump, Values are means ± SEM of three separate M-mode measurements. LVEF: left ventricular ejection fraction; FS: fractional shortening; LV mass : left ventricular mass; LV Vol; s: systolic left ventricular volume; LV Vol;d :diastolic left ventricular volume; LVAW,s : systolic left ventricular anterior wall; LVAW,d: diastolic left ventricular posterior wall; LVID,d: diastolic left ventricular internal dimension; LVID,s : systolic left ventricular internal dimension;LVPW,d: diastolic left ventricular posterior wall; LVPW,s: systolic left ventricular posterior wall.* p<0.05 vs. Sham & Sham+PF; [#]P< 0.05 vs. MI.