

## Supplementary material

Cao *et al.* Over-expression of mitochondrial creatine kinase preserves cardiac energetics without ameliorating murine chronic heart failure.

Main study	WT-SHAM	OE-SHAM	WT-TAC	OE-TAC
Number of mice undergoing surgery	11	13	23	21
Died / culled due to ill health	1	1	5	1
Number with complete echo data	10	12	16	20
Died during haemodynamic exam	0	0	2	1
Number with haemodynamic data	10	12	14	19
- Did not tolerate dobutamine	0	0	0	4
Excluded due to band internalisation	0	0	1	0
<b>NMR sub-group</b>				
Number of mice undergoing surgery	6	7	12	9
Died / culled due to ill health	0	1	4	2
Number with useable <sup>31</sup> P-NMR data	6	4	6	7

**Supplementary Table 1** Numbers and fate of all mice entering the study. Groups were wild-type (WT) and Mt-CK overexpressing mice (OE) that received either sham-operation or transverse aortic constriction (TAC).

Experimental group	Mouse ID	Days post-surgery	Reason for death
WT sham	LAFW15.2b	21	Euthanized due to genital mutilation (unrelated to procedure)
OE sham	LAFW26.1d	1	Euthanized due to intra-thoracic bleed associated with surgery
WT-TAC	LAFW7.5b	1	Euthanized due to peripheral oedema
WT-TAC	LAFW15.3b	31	Died of congestive heart failure
WT-TAC	LAFW16.2b	1	Euthanized due to acute heart failure
WT-TAC	LAFW15.3f	1	Euthanized due to acute heart failure
WT-TAC	LAFW20.2e	6	Euthanized due to >15% weight loss (humane end-point)
WT-TAC	LAFW15.5a	2	Euthanized due to acute heart failure
WT-TAC	LAFW20.4b	3	Euthanized due to >15% weight loss (humane end-point)
WT-TAC	LAFW20.4d	6	Euthanized due to >15% weight loss (humane end-point)
WT-TAC	LAFW15.6c	8	Died from aortic aneurysm
OE-TAC	LAFW13.4c	11	Died of congestive heart failure
OE-TAC	LAFW18.5g	5	Euthanized due to >15% weight loss (humane end-point)
OE-TAC	LAFW26.2a	2	Euthanized due to acute heart failure

**Supplementary Table 2** Causes of death for all mice not surviving until the 6 week haemodynamic examination.

	<b>WT-SHAM</b>	<b>OE-SHAM</b>	<b>WT-TAC</b>	<b>OE-TAC</b>
<i>Baseline</i>	<i>(n=10)</i>	<i>(n=12)</i>	<i>(n=14)</i>	<i>(n=19)</i>
Heart rate (bpm)	455 ± 17	448 ± 16	454 ± 10	487 ± 8
LV systolic pressure (mmHg)	102 ± 3	101 ± 2	149 ± 7 ***	127 ± 6 *
LV diastolic pressure (mmHg)	5.1 ± 0.7	3.7 ± 0.4	14.5 ± 2.7 *	17 ± 2.6 ***
dP/dt <sub>max</sub> (mmHg/s)	8482 ± 521	8666 ± 495	6886 ± 441	5829 ± 483***
Tau (ms)	7.9 ± 0.4	7.4 ± 0.5	11.0 ± 1.1	12.2 ± 1.0
<i>+ dobutamine</i>	<i>(n=10)</i>	<i>(n=12)</i>	<i>(n=14)</i>	<i>(n=15)</i>
Heart rate (bpm)	544 ± 13	538 ± 10	518 ± 11	543 ± 8
LV systolic pressure (mmHg)	103 ± 3	101 ± 2	146 ± 7 **	137 ± 6 **
LV diastolic pressure (mmHg)	4.8 ± 0.5	3.8 ± 3.2	12.9 ± 2.5	14.3 ± 3.0 **
dP/dt <sub>max</sub> (mmHg/s)	12444 ± 657	12870 ± 652	7714 ± 608***	7480 ± 736***
Tau (ms)	6.7 ± 0.3	6.3 ± 0.6	10.2 ± 1.2	9.8 ± 1.0 *

**Supplementary Table 3** Left ventricular haemodynamic parameters measured 6 weeks after sham or TAC surgery. Data is mean ± standard error. \* denotes P<0.05, \*\* P<0.01, \*\*\* P<0.001 for comparison between Sham and TAC groups within the same genotype. There were no significant differences between genotypes, i.e. between WT-Sham vs OE-Sham and WT-TAC vs OE-TAC.