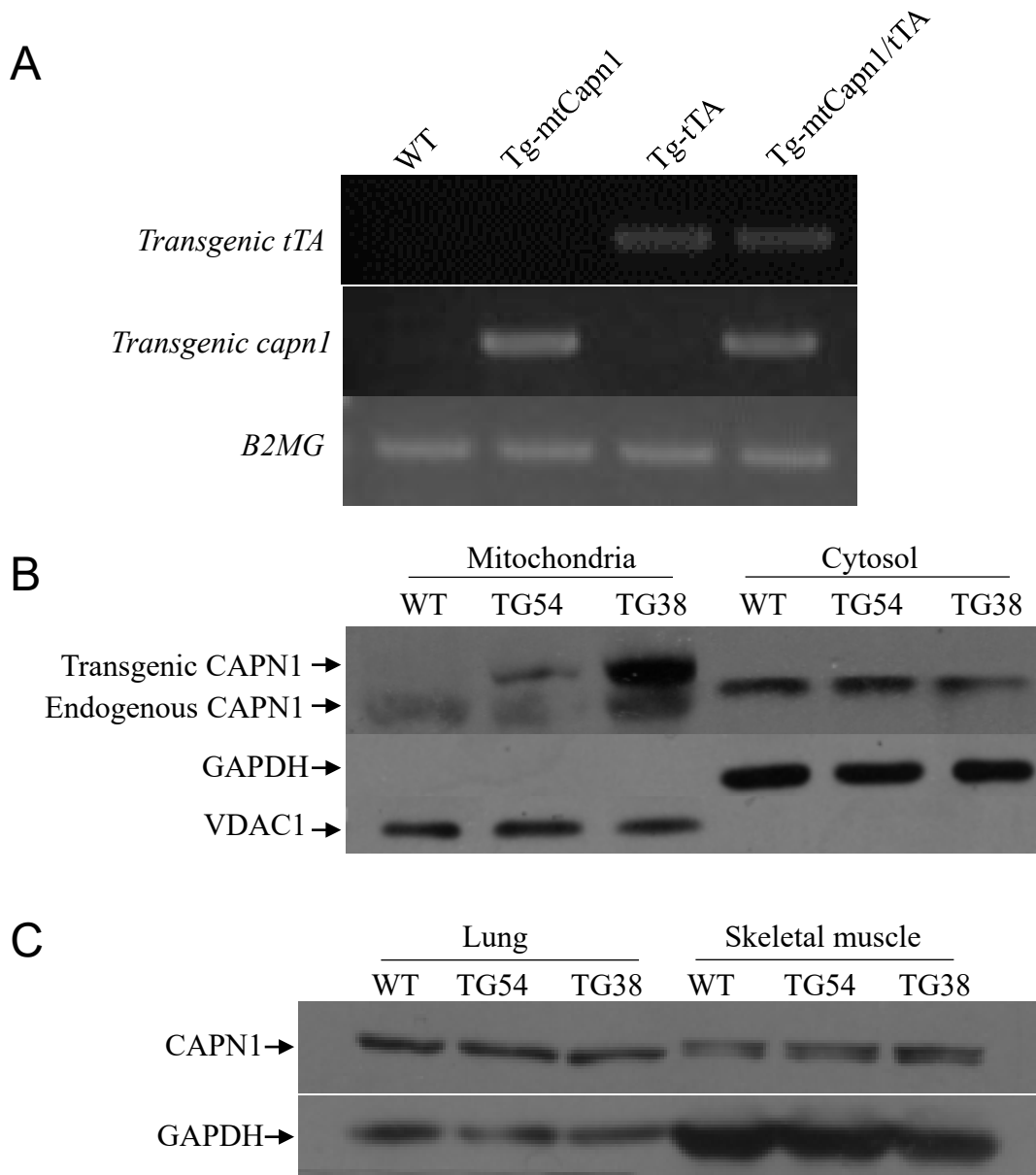
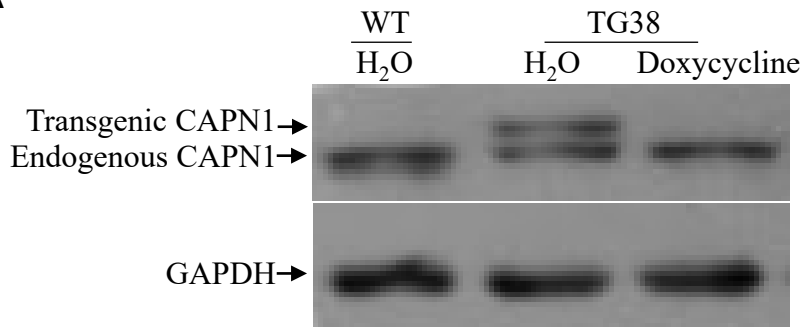


# Supplementary Figure 1

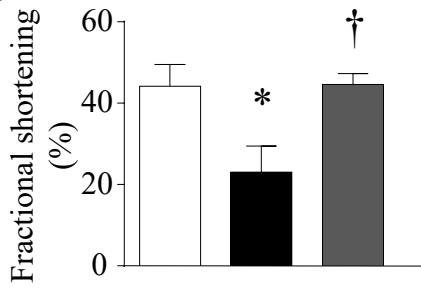


# Supplementary Figure 2

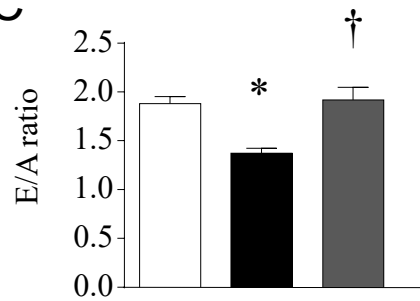
**A**



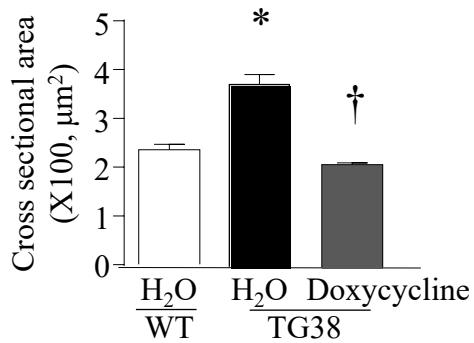
**B**



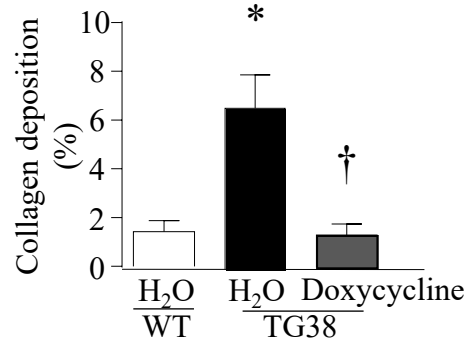
**C**



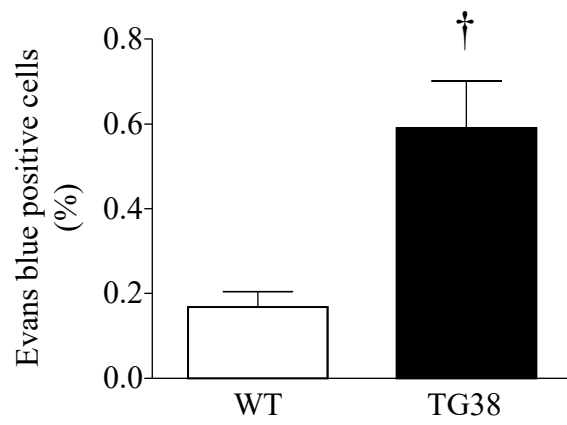
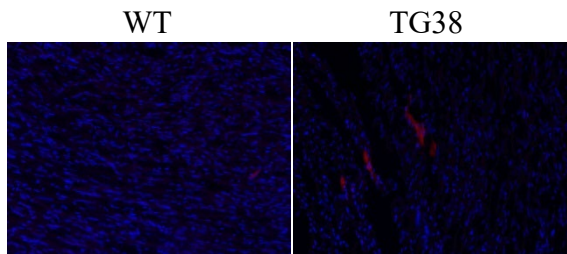
**D**



**E**



# Supplementary Figure 3



**Supplementary Table-1. Echocardiographic analysis, body weight and heart weight in mice**

	Treatment	WT			TG54			TG38		
		Vehicle	TEMPO	Mito-TEMPO	Vehicle	TEMPO	Mito-TEMPO	Vehicle	TEMPO	Mito-TEMPO
N	Before	5	5	5	5	4	5	5	4	6
	After	5	5	5	5	4	5	5	4	5
LVEDD (cm)	Before	3.4±0.3	3.4±0.3	3.6±0.2	3.8±0.2	3.4±0.3	3.3±0.4	3.6±0.3	3.7±0.1	3.8±0.4
	After	3.9±0.3	3.8±0.5	3.9±0.4	4.2±0.3	4.0±0.2	3.8±0.2	4.7±0.6*	4.4±0.3*	3.7±0.5
LVESD (cm)	Before	1.9±0.1	1.8±0.3	2.0±0.1	2.4±0.3	2.2±0.2	2.2±0.3	2.7±0.3	2.7±0.3	3.0±0.5
	After	2.2±0.2	2.2±0.6	2.2±0.3	3.0±0.2*#	2.9±0.1*\$	2.1±0.4 †	3.9±0.6*#	3.5±0.5*\$	2.5±0.5 ‡
Heart rate (beats/min)	Before	404±13	428±21	432±48	452±29	413±19	452±29	402±13	440±8	409±13
	After	452±46	456±39	435±51	410±13	433±14	437±40	433±17	430±21	433±37
SV (μl/beat)	Before	34.2±0.2	35.8±0.9	35.5±0.9	34.5±5.5	32.9±6	32.1±3.2	35.5±6.9	33.2±3.9	33.5±1.5
	After	47.9±11.3	47.2±10.4	52.5±12.8	41.8±8.5#	36.1±4.5\$	43.0±9	28.2±3.5#	30.9±8.8\$	40.5±2.9‡
CO (ml/min)	Before	13.7±0.4	15.2±1.4	15.3±1.1	15.6±2.9	13.2±2.2	14.1±1.3	14.4±2.8	14.0±2.0	14.7±0.5
	After	21.0±2.9	21.3±4.2	22.4±4.4	17.0±3.3#	15.5±1.5\$	19.0±4.7 †	12.2±1.5#	13.3±3.8\$	17.2±2.7‡
Body weight (g)	Before	23.0±0.8	22.2±1.5	22.3±1.0	26.5±0.4	22.9±1.6	23.7±1.5	24.6±0.5	23.2±1.2	23.5±0.7
	After	27.7±2.4	25.8±2.2	24.5±1.1	27.0±2.0	24.4±0.8	27.9±2.3	24.3±2.6	24.7±1.8	26.3±2.2
Heart weight (mg)	After	119.8±12.4	112.6±22.2	112.6±17.9	117.4±12.3	111±13.2	121.5±6.9	145.3±20.5	132.4±15.5	120.9±17.2

Transgenic mice Tg-mtCapn1/tTA<sup>low</sup> (TG54), Tg-mtCapn1/tTA<sup>high</sup> (TG38) and their wild-type littermates were given mito-TEMPO, TEMPO or vehicle starting from age two months for one month. N indicates numbers of animals in each group. LVEDD, LVESD, SV and CO indicate left ventricular end diastolic diameter and left ventricular and systolic diameter, stroke volume, and cardiac output, respectively. \**P*< 0.05 versus before treatment in the same category, # *P*< 0.05 versus WT+vehicle, \$ *P*< 0.05 versus WT+TEMPO, † *P*< 0.05 versus TG54+vehicle and TG54+TEMPO, and ‡ *P*< 0.05 versus TG38+vehicle and TG38+TEMPO.