Supplementary Materials for

IGF-1 Receptor Signaling is Required for Exercise-Induced Cardiac Hypertrophy

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Supplementary TABLE S1. Echocardiographic analysis of cardiac function in (A) sedentary and exercise-trained WT and CIGF1RKO mice and (B) sedentary and exercise-trained WT and CIRKO mice. Values are mean ± SEM. $^{*}P < 0.05$ versus WT sedentary. LVEDD indicates left ventricular end diastolic diameter; LVESD, left ventricular end systolic diameter; IVSd, interventricular septum thickness measured in diastole; IVSs, interventricular septum thickness measured in systole; PWd, left ventricular posterior wall thickness measured in diastole; PWs, left ventricular posterior wall thickness measured in systole; FS, fractional shortening; EF, ejection fraction.

Supplementary Figure S1. Serum IGF-1 concentrations obtained from sedentary (Sed) and trained (Sw) WT and CIGF1RKO mice. N = 4 (WT Sed); 3 (WT Sw); 6 (CIGF1RKO Sed); 5 (CIGF1RKO Sw). NS - not significant.

Supplementary Figure S2. Insulin receptor (IR) expression in hearts of sedentary (Sed) and trained (Sw) WT and CIGF1RKO mice. Upper panel is a representative blot and the lower panel is the densitometry of the depicted blot. NS - not significant.

Supplementary Figure S3. (A) Western blot analysis of sedentary and swim trained CIRKO mice showing total and phosphorylated AMPK. Upper panel is a representative blot and lower panel is densitometry of results from 3-4 hearts per group expressed as fold-change relative to sedentary WT. (B) Total and phosphorylated eEF2. Upper panel shows a representative blot and the lower panel is densitometry of results from 5-7 hearts per group. NS - not significant.

Supplementary Figure S4. Western blot analysis of sedentary and swim trained CIGF1RKO mice showing total and phosphorylated MEK (A) and ERK1/2 (B) in upper panels and densitometry in the lower panels. * $P < 0.05$, ** $P < 0.01$.

Supplementary Figure S5. Western blot analysis of sedentary and swim trained CIRKO mice showing total and phosphorylated MEK (A) and ERK1/2 (B) in upper panels and densitometry in the lower panels. NS - not significant.

Supplementary Table S1. Echocardiographic analysis of cardiac function

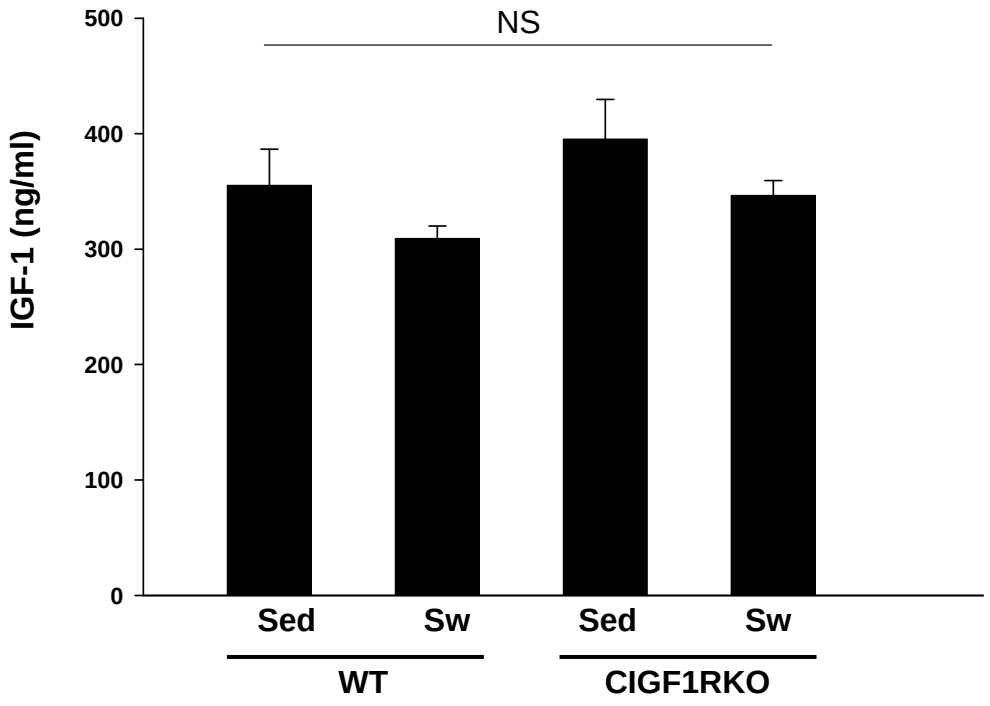
A

	WT Sed (n = 3)	*WT* Sw (n = 7)	*CIGF1RKO* Sed (n = 6)	*CIGF1RKO* Sw (n = 9)
LVEDD (mm)	3.67 ± 0.03	4.01 ± 0.1	3.98 ± 0.09	4.06 ± 0.06
LVESD (mm)	2.37 ± 0.15	2.71 ± 0.33	2.82 ± 0.12	2.87 ± 0.07
IVSd (mm)	0.80 ± 0.01	0.77 ± 0.03	0.85 ± 0.04	0.74 ± 0.03
IVSs (mm)	1.30 ± 0.01	1.21 ± 0.11	1.25 ± 0.14	1.19 ± 0.08
PWd (mm)	0.67 ± 0.03	0.74 ± 0.03	0.70 ± 0.04	0.64 ± 0.02
PWs (mm)	1.00 ± 0.06	1.03 ± 0.05	1.03 ± 0.04	0.92 ± 0.02
FS (%)	35.4 ± 2.0	31.9 ± 1.5	30.1 ± 2.3	29.1 ± 1.0
EF (%)	73.0 ± 2.5	68.1 ± 2.1	63.5 ± 4.0	64.2 ± 1.6

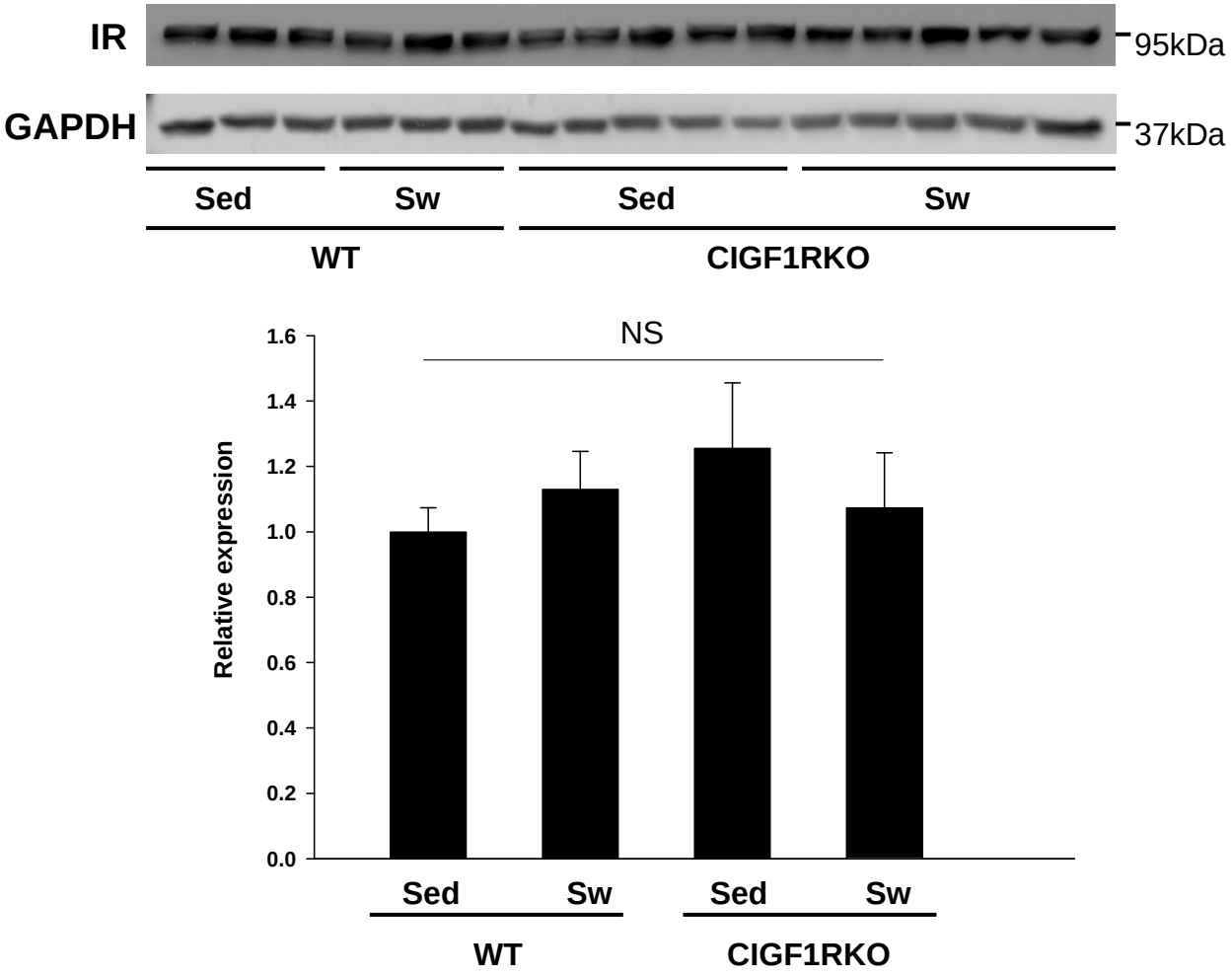
B

	WT Sed (n = 6)	*WT* Sw (n = 5)	*CIRKO* Sed (n = 6)	*CIRKO* Sw (n = 9)
LVEDD (mm)	4.07 ± 0.11	4.34 ± 0.11	4.00 ± 0.06	4.31 ± 0.30
LVESD (mm)	2.90 ± 0.17	3.06 ± 0.24	2.92 ± 0.08	3.14 ± 0.08
IVSd (mm)	0.78 ± 0.05	0.72 ± 0.05	0.63 ± 0.02 *	0.66 ± 0.02
IVSs (mm)	1.25 ± 0.06	1.26 ± 0.11	1.05 ± 0.03	1.09 ± 0.04
PWd (mm)	0.63 ± 0.02	0.62 ± 0.04	0.65 ± 0.04	0.60 ± 0.03
PWs (mm)	0.90 ± 0.03	0.94 ± 0.05	0.92 ± 0.05	0.86 ± 0.03
FS (%)	29.1 ± 2.5	30.1 ± 3.6	27.1 ± 1.3	27.1 ± 1.0
EF (%)	63.3 ± 3.4	64.6 ± 5.2	61.2 ± 1.9	61.0 ± 1.6

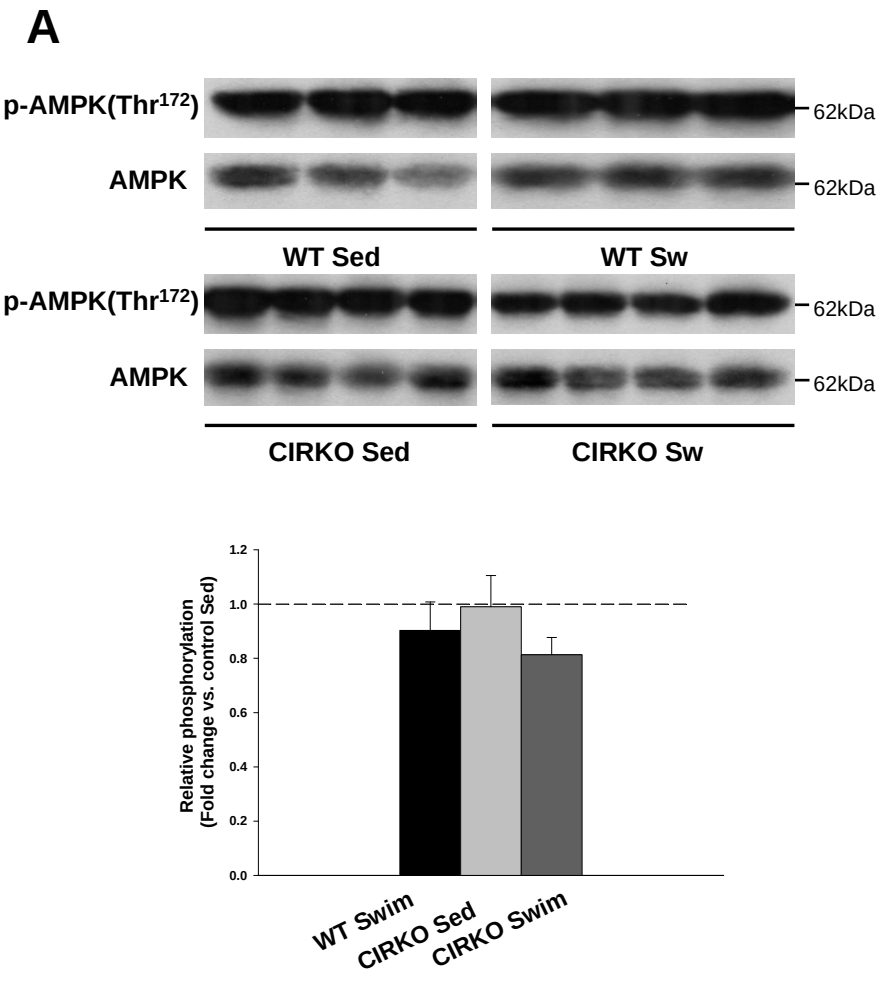
Supplementary Figure S1

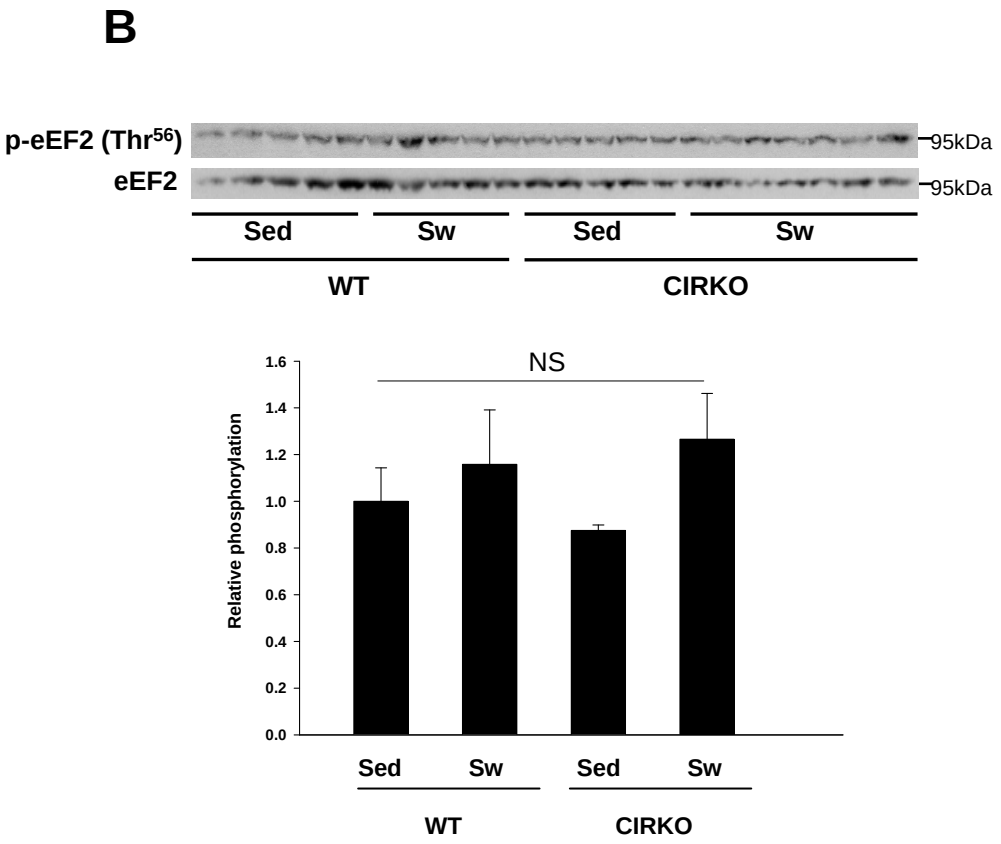


Supplementary Figure S2

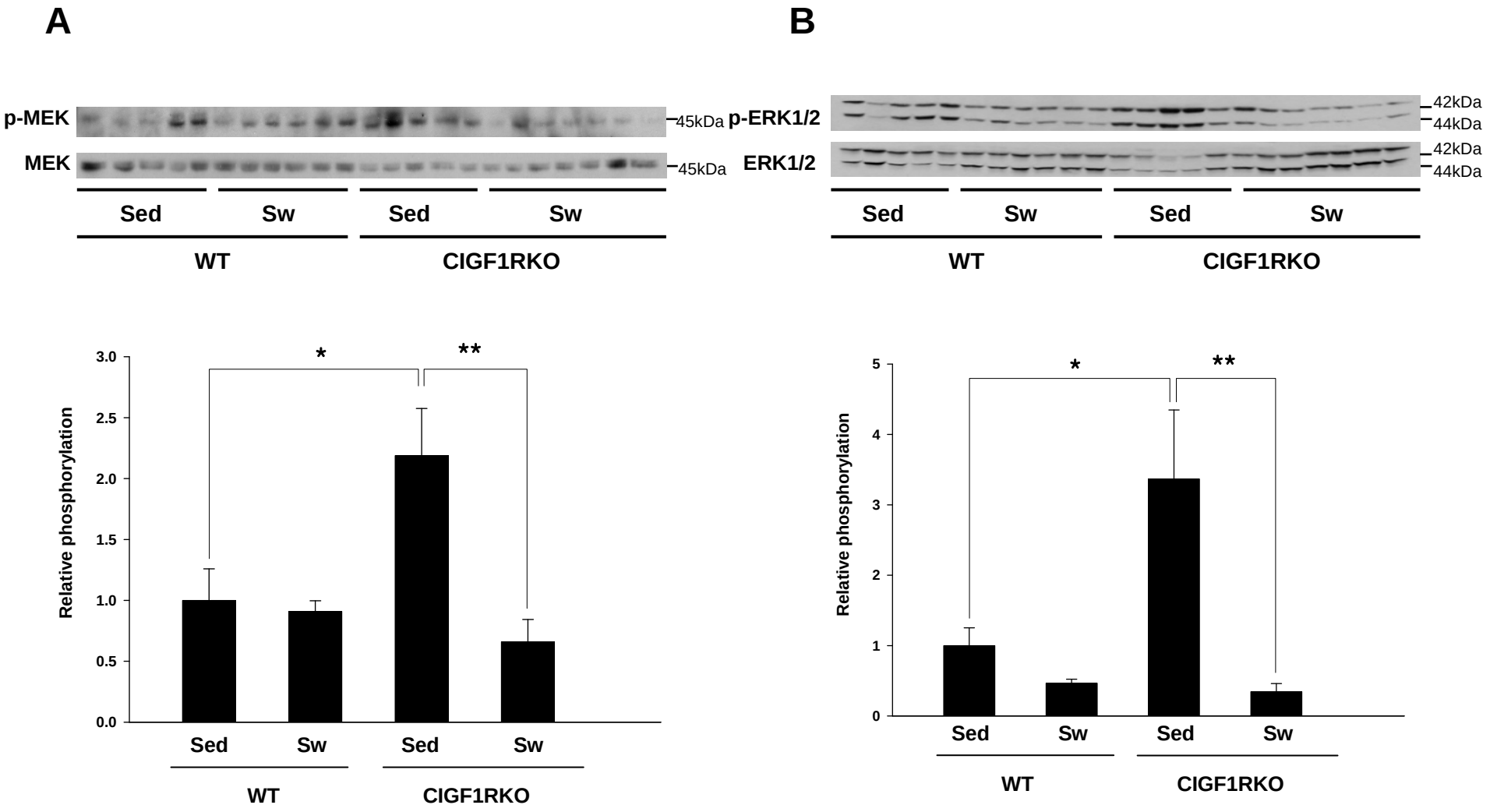


Supplementary Figure S3





Supplementary Figure S4



Supplementary Figure S5