Supplemental Method:

Blood pressure measurement

Systolic blood pressure (SBP) and heart rate (HR) were measured using a non-invasive tail-cuff method plethysmography (Visitech System, USA) and recorded for 7 days as described before.

Histological and immunohistochemistry analysis.

GIT1 WT and KO mice were anesthetized with an intraperitoneal injection of ketamine (130 mg/kg) and Xylazine (8.8 mg/kg) in saline (10 mL/kg). The mice were perfused with heparinized saline (1 unit heparin/ml saline) and fixed with 10% buffered formalin. The hearts were embedded, and 5 µm cryo-sections were prepared. Vessel density was evaluated using PECAM-1 staining. Briefly, the cryo-sections were blocked with 10% normal goat serum/PBS for 30 min and then incubated with PECAM1 antibody (BD Pharmingen, 1:400) for 2h at room temperature. After washing three times with PBS, sections were incubated with Alexa Fluor 488 goat anti-rat antibody or (Invitrogen,1:400) for 30 min at room temperature. Sections were washed three times with PBS and then mounted in the Vecta shield (Vector Laboratory, South San Francisco, CA). Random images (10 per section) were captured and morphometric analyses were conducted in a blinded fashion.

Supplemental data

Supplemental Table 1. Normal blood pressure and heart rate of GIT1 KO mice at 2-3 months.

	GIT WT (n=6)	GIT1KO (n=6)
Blood pressure (mm Hg)	118±4	123±5
Heart rate (bpm)	650±32	692±40

Supplemental figures

Supplemental Fig.1 Normal cardiac vasculature development of GIT1 KO mice.

A-B. PECAM-1 staining of hearts of GIT1 WT (A) and KO (B) at 2-3 months. Green staining is PECAM-1 positive vessel (brown staining). Bar=20 μm. **C.** Quantification of PECAM-1 expression. ($P>0.05$ *vs* WT group, n=3) **D-I.** Analysis of VEGFR2 expression (D-E) and phosphorylation of PLCγ (F-G) and ERK1/2(H-I) in GIT1 WT and KO mice at P2-3.

Supplemental Fig.2 α-Actinin staining of adult cardiomyocytes of GIT1 WT and KO mice (2-3 months).

Immunostaining of α-actinin was performed on fixed adult cardiomyocytes of GIT1 WT(A) and KO (B) mice. The GIT1 KO cells showed normal cytoskeleton structure, but increased size.

Supplemental Fig.3 PGC-1α expression was not altered in skeletal muscle of GIT1 WT and KO mice.

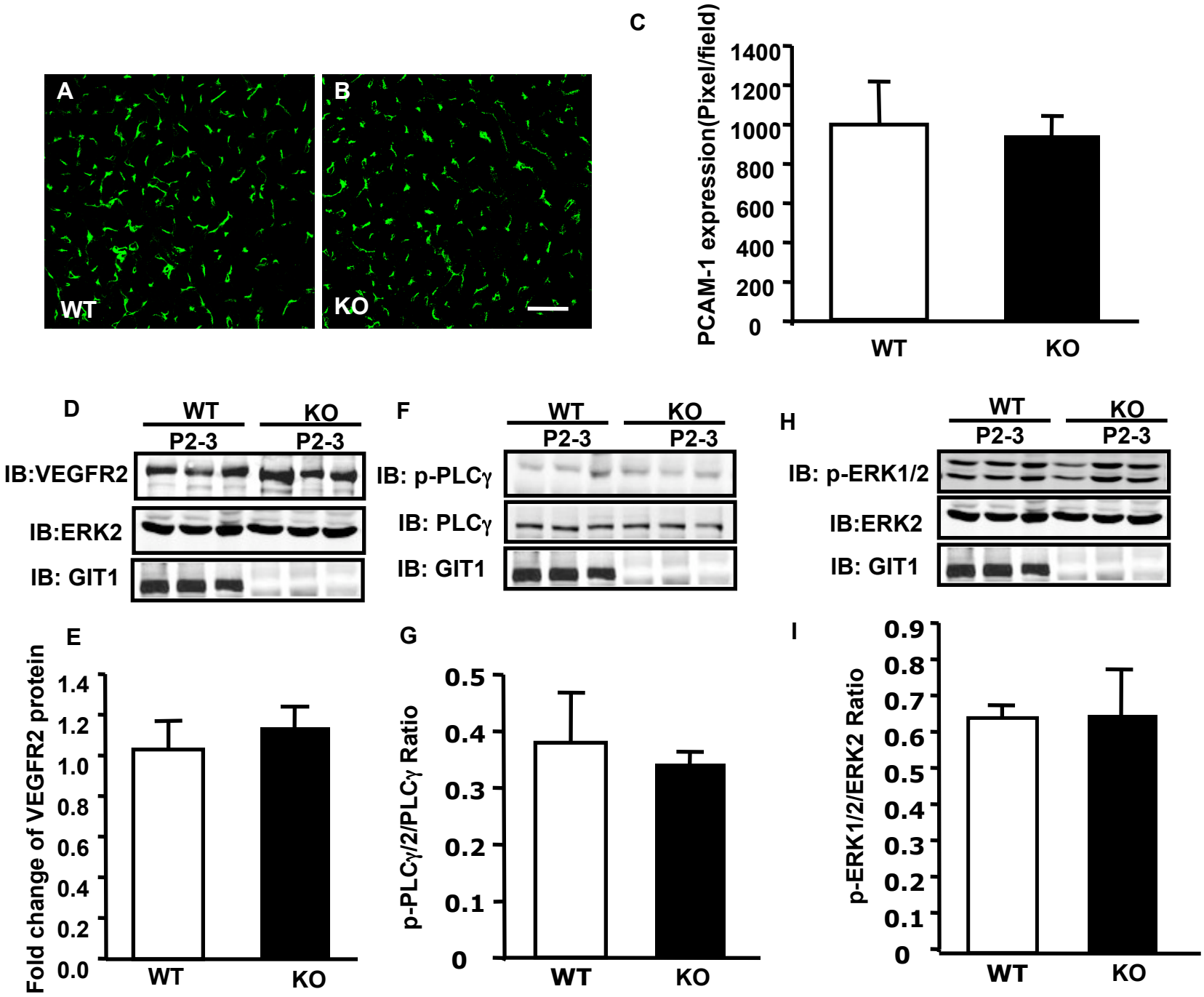
A-B. PGC-1α protein expression in GIT1 WT and KO mice hearts (P2-3) was assayed by western blot (A). Lower panel (B) shows relative level of PGC-1α protein normalized to

tubulin (* P>0.05 *vs.* WT group).

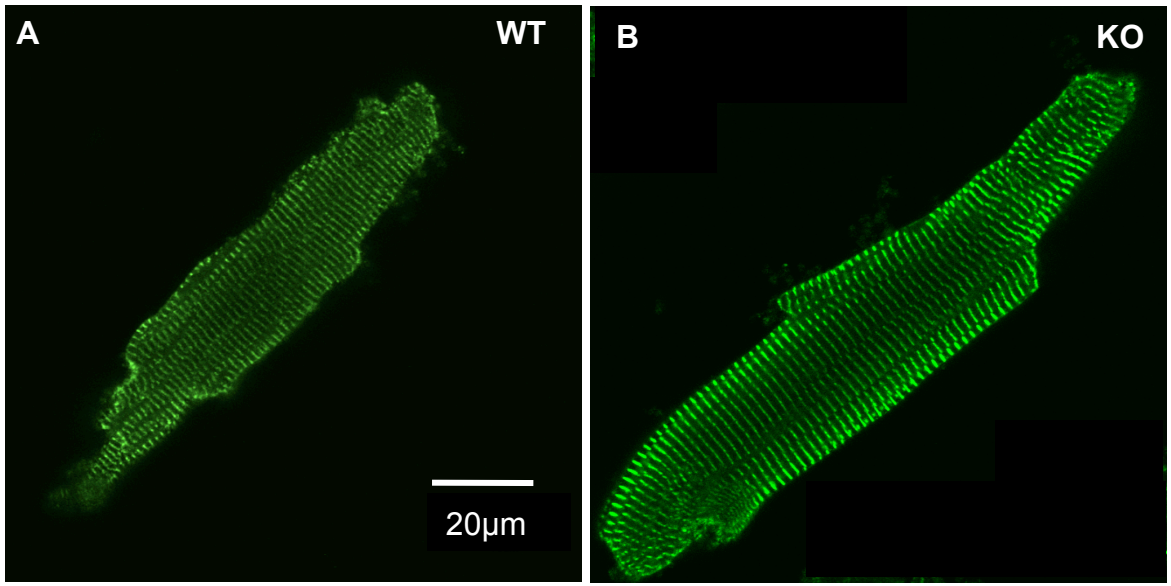
Supplemental Fig.4 GIT1 KO mice at 1 month showed normal cardiac function.

A. Left ventricular Ejection fraction (EF%). **B.** Left ventricular fractional shortening (FS%)(n=5).

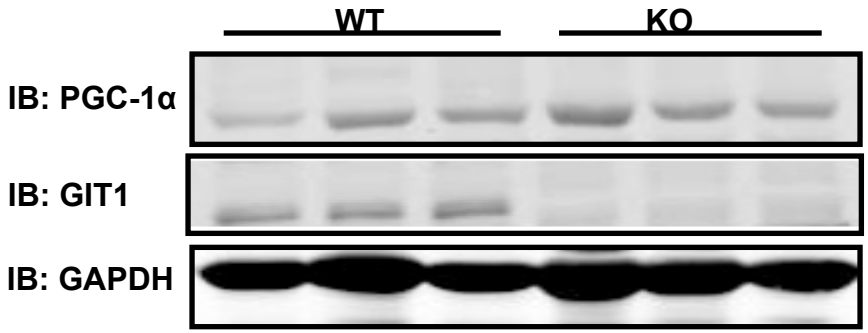
Supplemental Fig.1



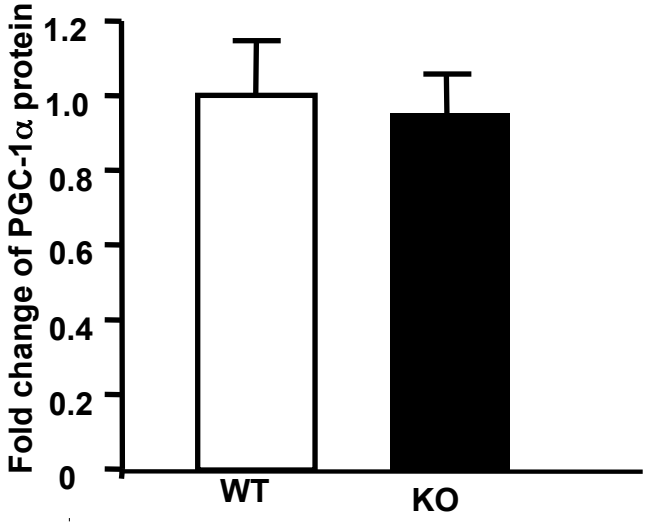
Supplemental Fig.2



Supplemental Fig.3



A



Supplemental Fig.4