Figure S1. Immunofluorescence localization of HK2 protein in HL-1 cardiomyocytes. (A) DAPI nuclear staining, (B) HK2 immunofluorescence and (C) Merged HK2/DAPI channels (HK2-WT). (D) DAPI nuclear staining (blue) in HK2-overexpressing cells (HK2-OE). (E) HK2 immunofluorescence (green) in HK2-OE cells. (F) Merged HK2/DAPI channels (HK2-OE). HK2 expression was increased in the HK2-OE group, and HK2 was expressed in both the cytoplasm and nucleus, suggesting it may serve a role other than glycolysis. HK2, hexokinase 2; OE, overexpression; WT, wild-type.

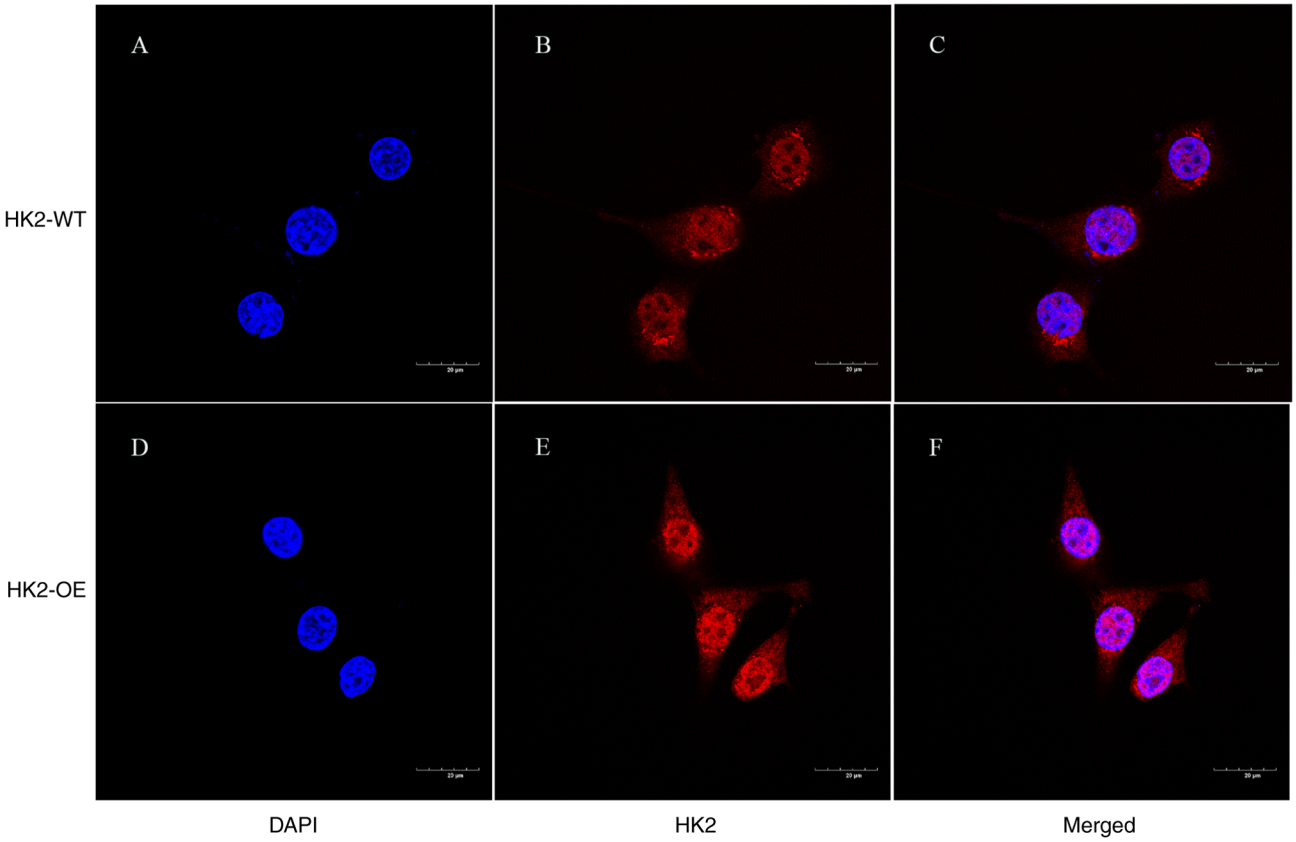

Figure S2. Liquid-liquid phase separation in immunofluorescence staining of HL-1 cardiomyocytes. (A) DAPI staining of the nucleus. (B) Intracellular HK2 immunofluorescence labeling. (C) Cytoplasmic and nuclear staining. Arrows indicate HK2-positive biomolecular condensates exhibiting LLPS characteristics (spherical morphology, dynamic fusion). HK2, hexokinase 2; OE, overexpression; WT, wild-type.

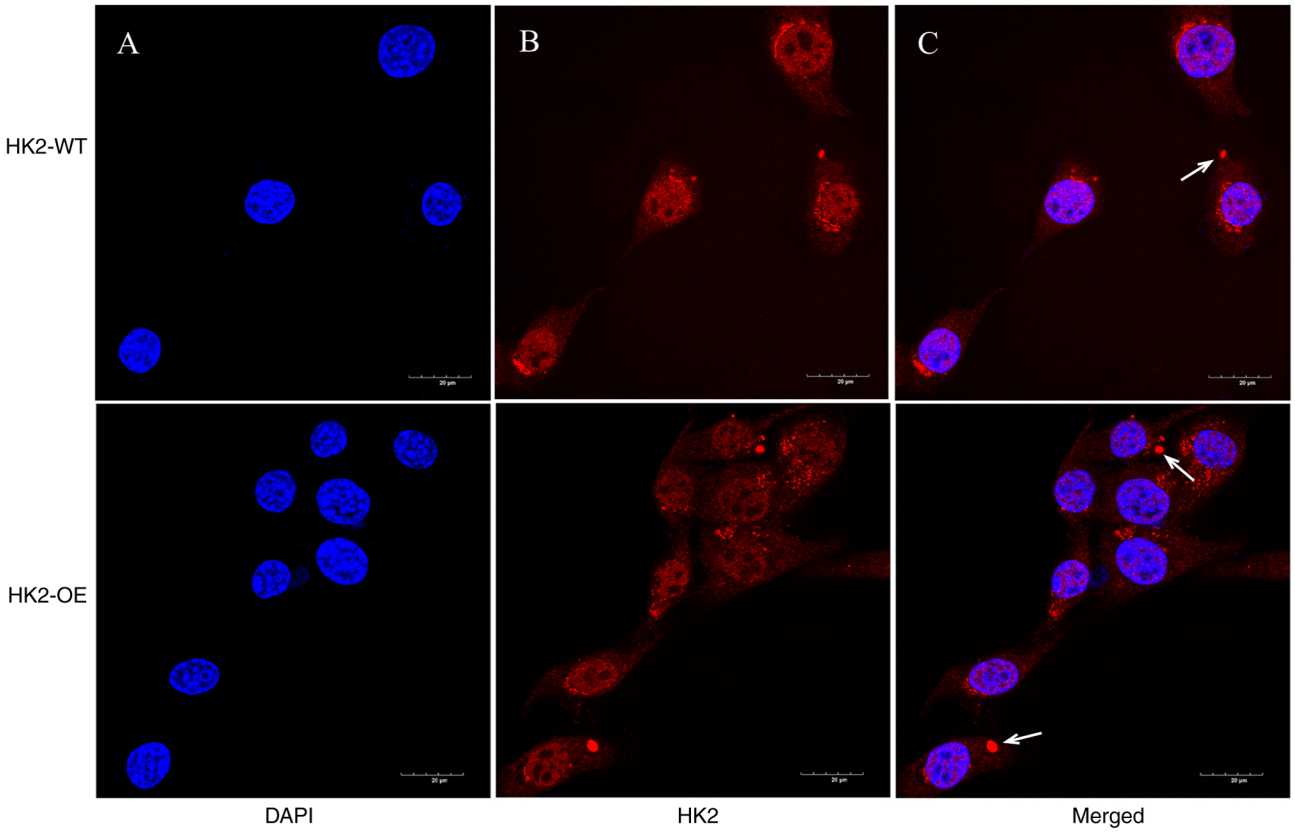

Figure S3. Sonograms of M-mode measurements of the LV inner diameter. M-mode echocardiographic image of the LV long axis in (A) db/m control and (B) db/db diabetic mice. LV, left ventricle.