

**Supple 1.** Timeline of the animal experiments. Animal experiment 1: Rats were randomly divided into four groups. WKY or SHRs rats were administrated with PBS or GB at the dosage of 100, 200, or 400 mg/kg/d for 21 d to investigate the effect of GB on myocardial hypertrophy. Animal experiment 2: Rats were randomly divided into four groups. SHR rats were injected with LV-STIM1 or LV-NC into the caudal vein and administrated with 400 mg/kg/d of GB for 21 d to verify the role of STIM1/ Orai1 signaling in myocardial hypertrophy. WKY, Wistar-Kyoto rats; SHRs, spontaneously hypertensive rats; PBS, phosphate buffered saline; GB, glycine betaine; LV, lentivirus; NC, negative control; STIM1, stromal interaction molecule 1.