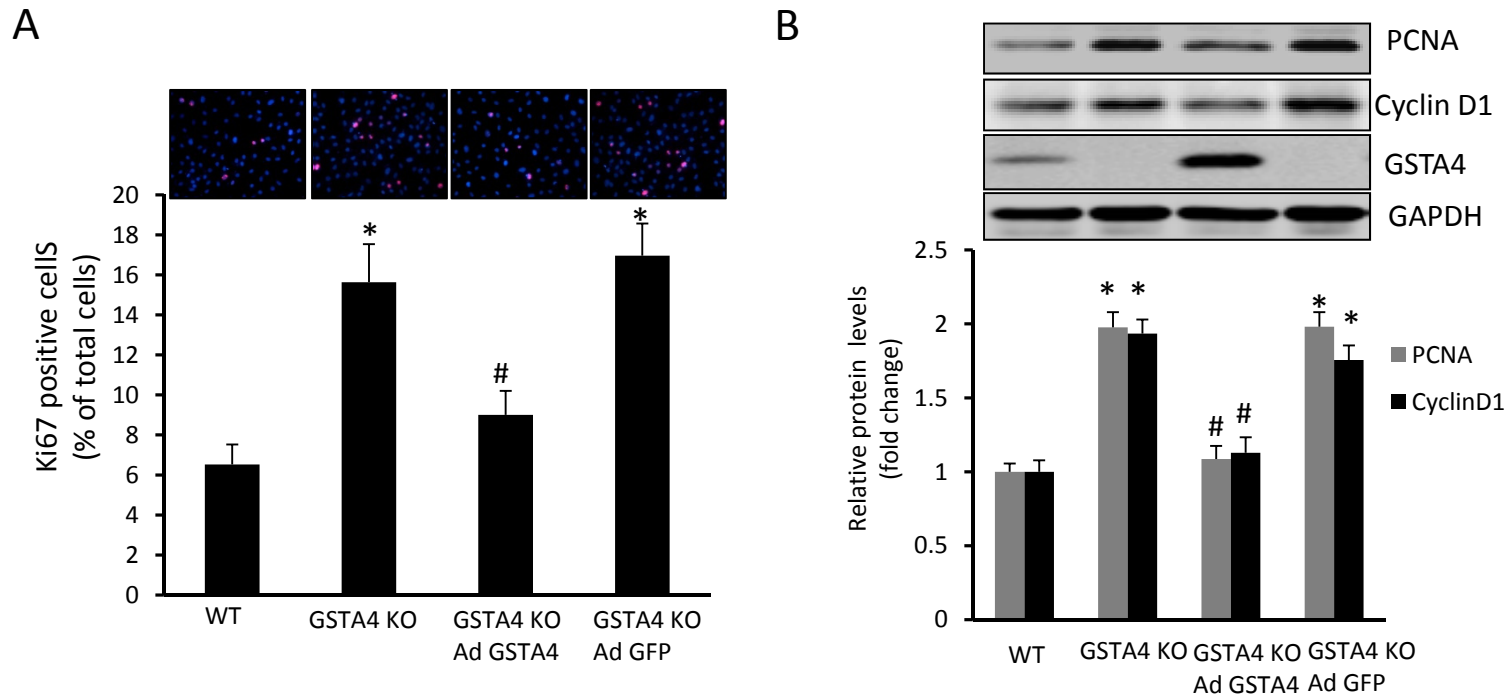
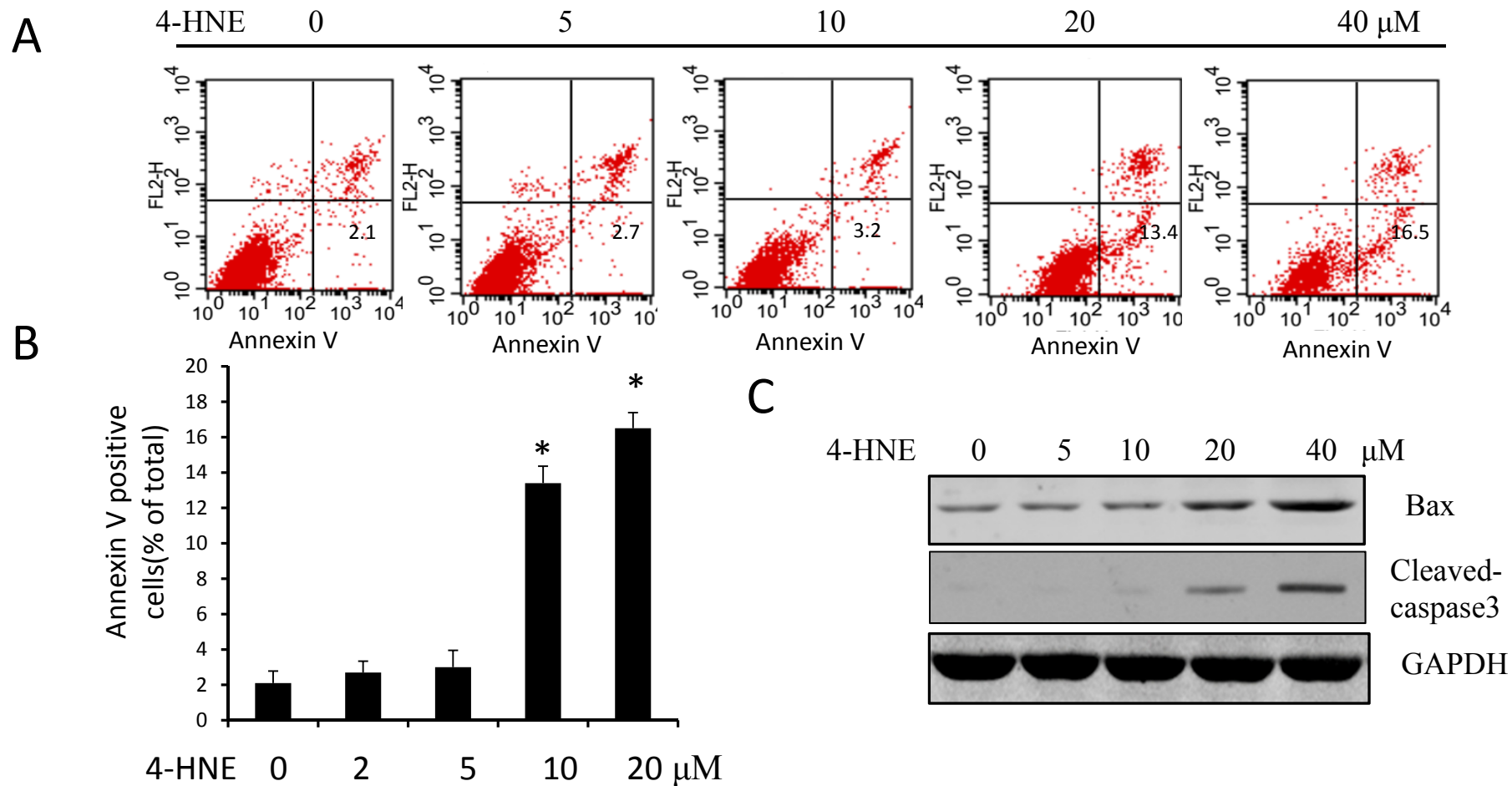


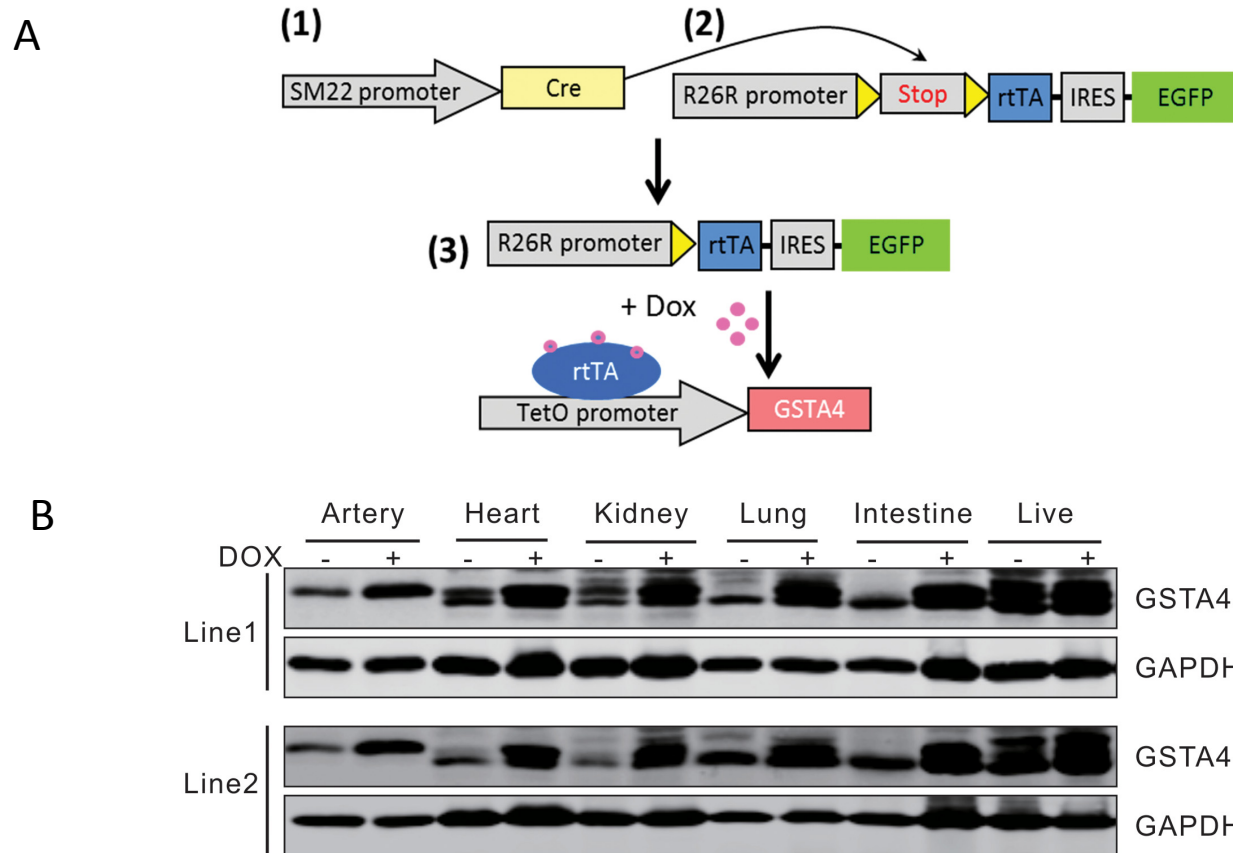
Supplemental figure 1. Comparison of the outgrowing cells from artery and vein. Artery and vein segments were seeded onto 24-well plates and cultured in DMEM complete medium *ex vivo*; pictures of the outgrowing cells were taken at indicated time points. Representative pictures are presented.



Supplemental figure 2. Loss of GSTA4 promoted arterial SMC proliferation. Mouse arterial SMCs were isolated from WT and *GSTA4 KO* mice. The *GSTA4* deficient arterial SMCs were transfected with AdGSTA4 or GFP adenovirus. A. The proliferation of the cells was detected by immunostaining of Ki67 (upper panel), and the quantitative analysis of Ki67 positive cells was summarized (down panel). B. Cell lysates were isolated from the arterial SMCs, and the expression of proliferation markers, PCNA and Cyclin D1, was determined by Western blots. Representative data was shown from 3 experiments (G) (*, $p < 0.05$ versus WT; #, $p < 0.05$ versus *GSTA4 KO*).



Supplemental figure 3. High dose of 4-HNE induces cell apoptosis. A. vein SMCs were treated with different doses of 4-HNE for 24 h. The cells were incubated with anti-annexin V antibody and determined by flow cytometry. B. the annexin V positive populations in Panel A was summarized. C. Vein SMCs were treated with 4-HNE with indicated doses, and the Bax and cleaved caspase 3 were detected by Western blot analysis. Representative data from 3 experiments (*, $p < 0.05$ versus control).



Supplemental figure 4: Doxycycline induces GSTA4 expression in *GSTA4* transgenic mice: A. Breeding strategy for generating mice with inducible GSTA4 expression in SMCs. Two breeding steps were used to generate these mice. First, *Tet-On-GSTA4* mice were bred with *rtTA-EGFP* mice to obtain double transgenic *GSTA4/rtTA* mice. Second, the obtained *GSTA4/rtTA* mice were bred with *SM22-Cre* mice to get triple transgenic *GSTA4/rtTA/SM22-Cre* mice. The GSTA4 expression can be induced by doxycycline. B. The expression of GSTA4 was detected in tissues in *GSTA4/rtTA/SM22-Cre* transgenic mice. Triple transgenic mice from 2 lines were fed with water containing 0.5 mg/ml doxycycline for 14 days, GSTA4 expression was detected from different tissues. Tissues from non-doxycycline treated mice were used as control.