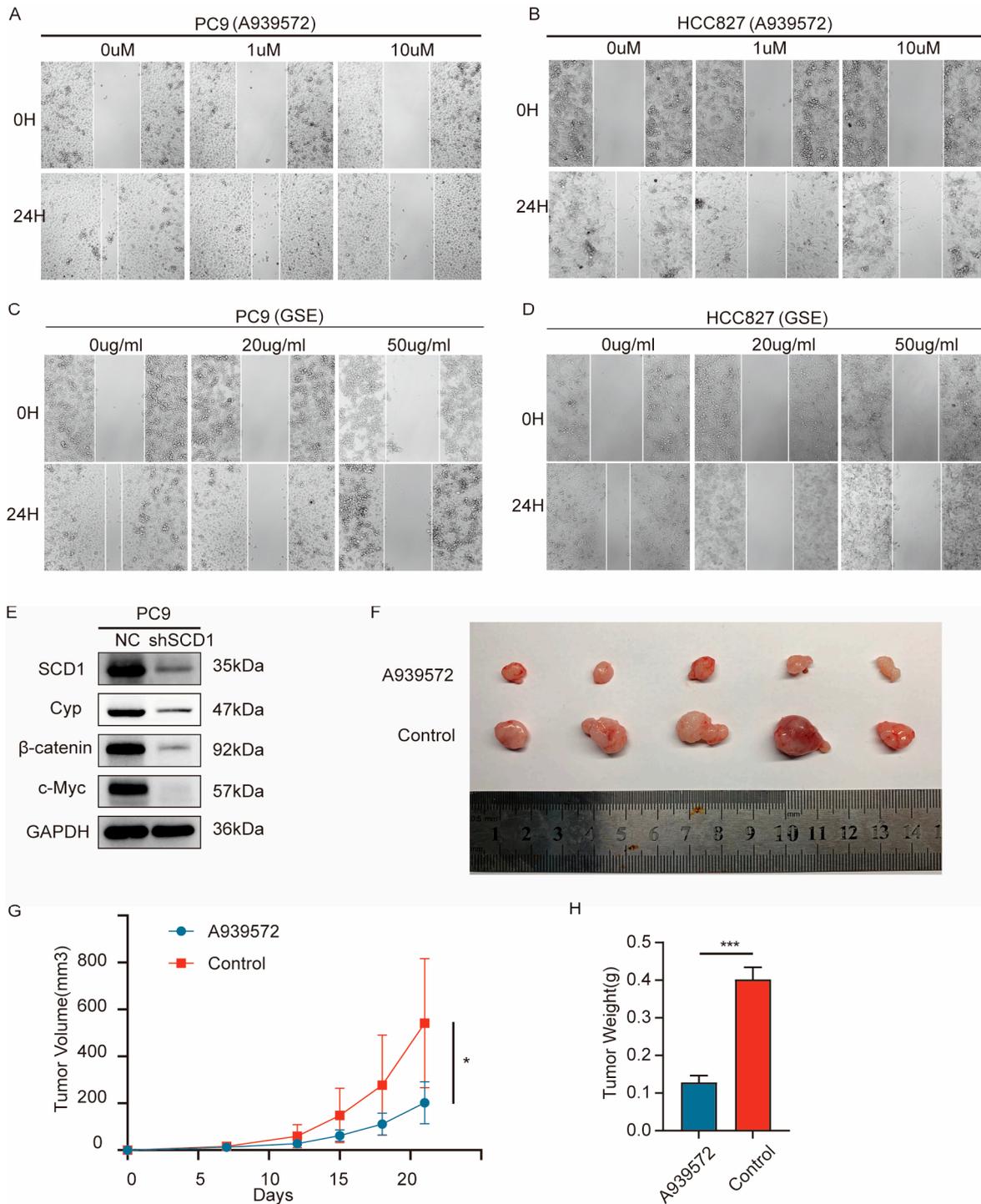


**Supplementary Figure S1. A, B** The migration ability of transfected PC9 evaluated by wound healing assays. **C** The CYP19A1 protein expression levels in lung cancer tissues and

corresponding pericancerous tissues as measured by Western blotting. **D, E** The protein and mRNA (n = 3) levels were verified by Western blotting and qRT-PCR in PC9 and HCC827 cells with transient CYP19A1 knockdown. **F** The migration ability of transfected PC9 cells was evaluated by wound healing assays. **G** The CYP19A1 mRNA level in PC9 and HCC827 cells treated with XAV939 for 48 h. **H** The SCD1 mRNA levels in CYP19A1 knockdown (left) and overexpression (right) cells. The SCD1 protein levels in CYP19A1 **I** knockdown and **J** overexpression cells. **K** The protein levels of  $\beta$ -catenin, CYP19A1, and SCD1 when exposed to estrogen at a concentration of 10 nM for 12, 24, and 48 hours in PC9 and HCC827 cell lines. **L** The  $\beta$ -catenin, CYP19A1, and SCD1 protein levels when exposed to 0, 10, and 50, 100 nM estrogen for 48 hours. \*\*p < 0.01; \*\*\*p < 0.001. Error bars indicate mean  $\pm$  SD. Cyp: CYP19A1.



**Supplementary Figure S2.** The migration ability of **A** PC9 and **B** HCC827 cells treated with A939572 was evaluated by wound healing assays. The migration ability of **C** PC9 and **D** HCC827 cells treated with GSE was evaluated by wound healing assays. **E** The protein levels of SCD1, Cyp, β-catenin, and c-Myc with stable knockdown of SCD1. PC9 cells were used for xenograft tumor, **F** tumor size, **G** tumor growth curve, **H** tumor weight were displayed. A939572 (50mg/kg, p.o., q3d) treatment was started on the fourth day, total 21 days. \*\*\* $p < 0.001$ . Error bars indicate mean  $\pm$  SD. Cyp: CYP19A1.