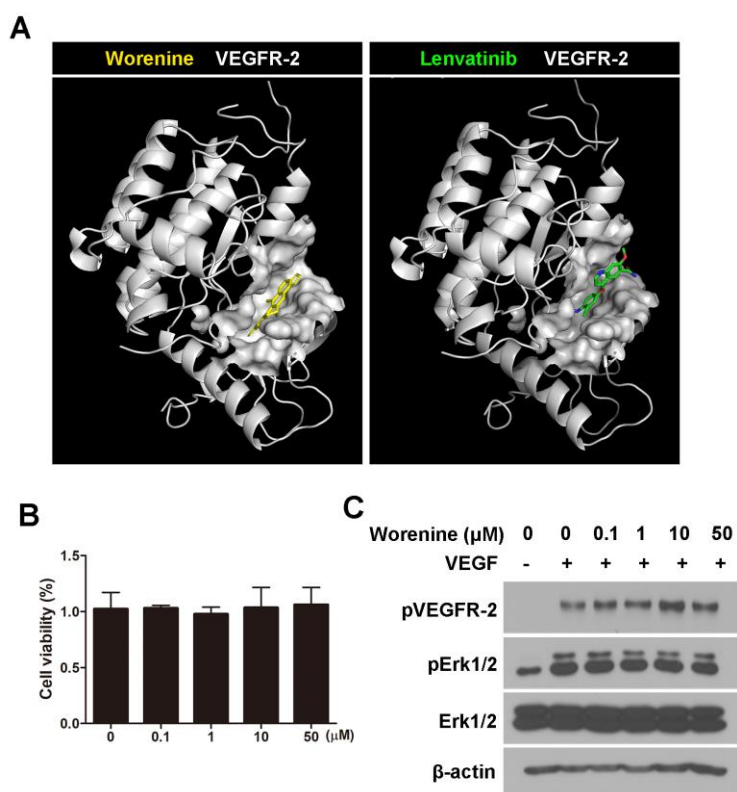
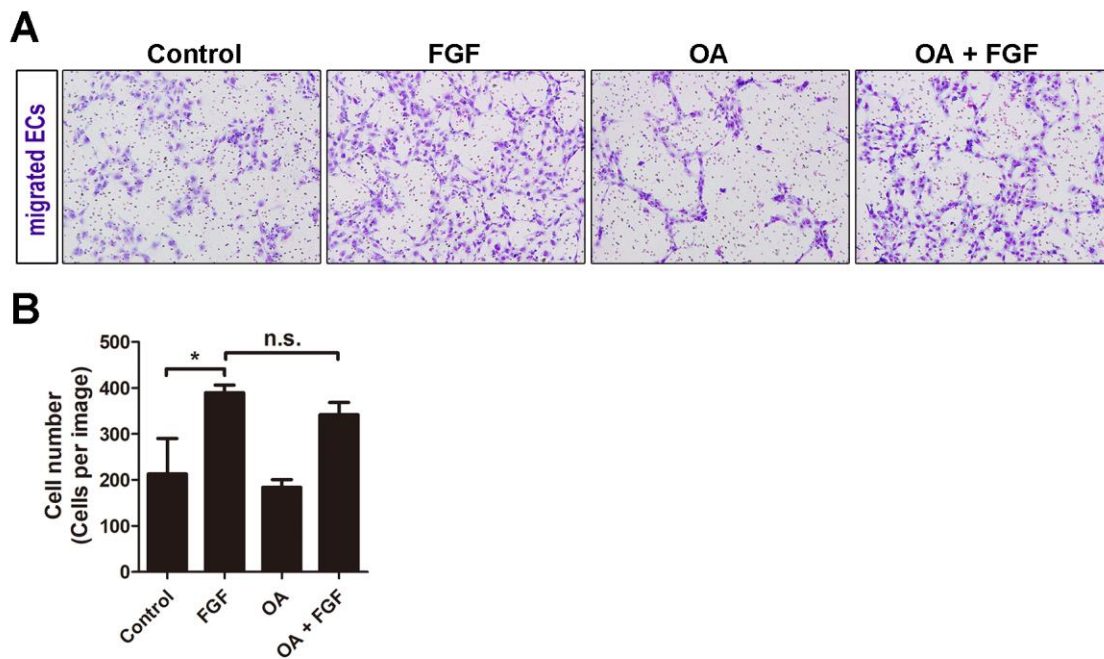


## SUPPLEMENTARY FIGURE LEGENDS



**Figure S1.** Effect of worenine on VEGF-induced VEGFR-2 activity. (A) Scheme for virtual screening of oleanolic acid with VEGFR-2. Worenine (yellow, -9.7 kcal/mol) was bound to VEGFR-2 (grey) with similar binding affinity as the reference drug lenvatinib (green, -8.0 kcal/mol). (B) HUVECs were treated with worenine at the indicated doses. The cell viability was determined by MTT assay. Note that worenine at any doses showed no toxicity toward HUVECs. The bar graph represents the means  $\pm$  SD ( $n = 4$ ). (C) VEGF-induced VEGFR-2 phosphorylation (pVEGFR-2) or Erk1/2 phosphorylation (pErk1/2) in HUVECs with or without the pretreatment of worenine at the indicated doses was examined by western blot analysis. Erk1/2 and  $\beta$ -actin were used as controls.



**Figure S2.** Effect of worenine on FGF-induced changes in angiogenic features of HUVECs. (A) Representative images of cell migration of HUVECs treated with FGF (20 ng/mL) and/or oleanolic acid (10  $\mu$ M). The migrated cells were stained with Diff-Quik solution (purple). Original magnification is 100 $\times$ . (B) Quantitative analysis of cell migration in panel (A). The bar graph represents the means  $\pm$  SD ( $n = 4$ ). \*  $P < 0.05$  between the two values.