

**Supplemental Figure** 1: (A) Flag-Snail was expressed with or without Myc-SPAK. Cells were treated with or without 10 µm SB203580 (SB) for 24 h. Lysates were analyzed by western blot. (B) HA-Snail and Myc-GSK3β was co-transfected with or without Myc-SPAK into 293T cells, then treated with MG132 for 6 h. Cell lysates were immunoprecipitated using anti-Myc antibody and analyzed by immunoblotting.



**Supplemental Figure 2:** (A) Schematic diagram showing the structure of Snail and deletion constructs used (top panel). Flag-tagged full-length (FL) or deletion mutants of Snail were co-expressed with Myc-SPAK in HEK293T cells. Extracts were subjected to IP with Flag or Myc antibody, and bound SPAK or Snail was analyzed by Western blot using either Myc or Flag antibody. (B) Flag-Snail WT or Flag-Snail T203A was co-transfected with Myc-SPAK WT or T203 into 293T cells, then treated with MG132 for 6 h. Cell lysates were immunoprecipitated using anti-Flag antibody and analyzed by immunoblotting using a specific antibody against pT203-Snail.



Supplemental Figure 3: (A) STK39 was expressed in MCF7 and T-47D cells. A rescue experiment with knockdown of SNAI1 expression in WT-STK39 expressing cells was also performed. Representative imagines for cell migration. (B) Representative imagines for cell invasion.

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Supplemental Figure 4: (A) STK39 was knocked down by two different shRNAs in MDA-MB-231 and MDA-MB-157 cells. Rescued SNAI1 expression in the STK39-knockdown clone was also performed. Representative imagines for cell migration. (B) Representative imagines for cell invasion.