



**Supplementary information, Figure S3** Localization of  $\beta$ -catenin in ESCs knocked down for *Smek1* and *Smek2*.

(A, B) Representative immunostaining of  $\beta$ -catenin (red), Smek1 (green, A), and Smek2 (green, B) in ESC lines expressing control or *Smek1/2* shRNA, counterstained with Hoechst 33258. Scale bar, 50  $\mu$ m. (C) Higher magnification of samples from A and Western blot analysis of nuclear extracts with anti- $\beta$ -catenin, -Smek1, and -Smek2 antibodies. Lamin A/C was used as an internal control in nuclear fractionation. Scale bar, 20  $\mu$ m. Diffuse staining of  $\beta$ -catenin was found throughout membrane, cytoplasm, and nucleus (left). The protein levels of  $\beta$ -catenin have no significant change between control and knockdown cells (right). (D) Localization of Smek in nucleus. Scale bar, 20  $\mu$ m.