



**Supplementary Figure 1. PIN-induced osteoblast differentiation is mediated by BMP2 and  $\beta$ -catenin signaling.** After pre-osteoblasts were differentiated with PIN in the absence and presence of Noggin and Dkk-1 for 7 days, ALP activity was measured at 405 nm using a spectrophotometer. Data represent the mean  $\pm$  S.E.M. of experiments. \*: statistically significant difference compared with the control ( $p < 0.05$ ). #: statistically significant difference compared with OS ( $p < 0.05$ ). \$: statistically significant difference compared with the OS + PIN ( $p < 0.05$ ).