



Figure 7- figure supplement 1. Centrosome localized HMMR localizes Ran and positions metaphase spindles in neural cells and rosettes derived from ES cells.

(A) Immunofluorescence detection of HMMR in SHSY5Y neuroblastoma cells treated with non-short hairpin (NHP) or HMMR shRNA (shHMMR). Scale bar, 5 μ m. (B) Localization of Ran in SHSY5Y neuroblastoma cells treated with NHP or shHMMR. Scale bar, 5 μ m. (C) Quantification of Ran localization in SHSY5Y cells. Data are represented as mean \pm SD (**, $p < 0.006$; $n = 39$ (NHP), 35 (shHMMR)). (D) HMMR protein levels were reduced in *Hmmr*^{BB0166/+} (BB0166) ES cells, which express a β -Geo fusion from one allele. E14Tg2 (WT) ES cells were used as the wild-type line. Actin was used as a loading control. (E) The *Hmmr* promoter was active, as indicated by β -Geo activity, in apical cells within rosettes. Scale bars, 50 μ m (ES cells and Day 3); 1 mm (Day 11). (F) HMMR-positive cells are Cyclin B1 (CCNB1)-positive in neural rosettes. Scale bar, 10 μ m. (G) Spindle position in WT and BB0166 neural rosettes. Dotted line indicates cell border. Scale bar, 5 μ m. (H) Quantification of spindle position in WT and BB0166 rosettes. Data are represented as mean \pm SD (***, $n = 31$ (WT); 23 (BB0166)).