

## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: Exome sequencing of MMTV-PAK4 tumors.

File Name: Supplementary Data 2

Description: Alignment statistics of RNA-Seq data in Hs 578T and BT-549 cells.

File Name: Supplementary Data 3

Description: Differential expression analysis of RNA-seq data between siControl and siPAK4#1 in Hs 578T cells, 72 hours after transient transfection.

File Name: Supplementary Data 4

Description: Differential expression analysis of RNA-seq data between siControl and siPAK4#1 in BT-549 cells, 72 hours after transient transfection.

File Name: Supplementary Data 5

Description: NF- $\kappa$ B (RELA) target genes in Hs 578T cells upon PAK4 knockdown.

File Name: Supplementary Data 6

Description: NF- $\kappa$ B (RELA) target genes in BT-549 cells upon PAK4 knockdown.