

## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: Lists of significantly differentially expressed genes in ACVR1 R206H infected neurospheres compared to ACVR1 WT infected neurospheres, with and without H3.1K27M, as determined by RNAseq analysis.

File Name: Supplementary Data 2

Description: GSEA analysis results of ACVR1 R206H infected neurospheres compared to ACVR1 WT infected neurospheres, with and without H3.1K27M, as determined by RNAseq analysis.

File Name: Supplementary Data 3

Description: Uncropped and unprocessed Western blot gels of representative images.

File Name: Supplementary Data 4

Description: Validation of human cells lines using short tandem repeat analysis