

## Descriptions of additional supplementary files

**Supplementary Data 1:** Source data

**Supplementary Data 2:** All possible sgRNAs from all gene isoforms within the human genome.

**Supplementary Data 3:** 420 sgRNAs designed for all of the exons of *MAP2K1*, *KRAS*, *NRAS*.

**Supplementary Data 4:** Linear regression results of cells for replicate 1 and 2. Varied genes depend on the condition: treatment, period, and their intersection (treatment:period).

**Supplementary Data 5:** p-value of ANOVA test according to gene and sgRNA for replicate 1 and 2 result.

**Supplementary Data 6:** Result of Wilcoxon rank-sum test for DMSO-treated cells.

**Supplementary Data 7:** Marker genes for the rep1-1, rep2-1 and rep2-2 cluster.

**Supplementary Data 8:** sgRNAs targeting the same region.