## **Description of Additional Supplementary Files**

Supplementary Data 1| The analysis of metabolic CRISPR library screen by MAGeCK

**Supplementary Data 2**| Up-regulated genes in human tumors (cited data)

Supplementary Data 3 | Altered genes in siMTHFD2 cancer cells in RNA-seq

**Supplementary Data 4**| MTHFD2 correlated genes in TCGA clinical samples (RNASeqV2 syn4976369TGCA)

Supplementary Data 5 | Metabolomics analysis of siMTHFD2 cancer cells by MS

Supplementary Data 6| List of primers used