

## Description of Additional Supplementary Information

File Name: Supplementary Data 1

Description: List of selected 59 genes that exhibited strongly significant (FDR  $q < 0.001$ ) negative correlation between DNA methylation and RNA expression levels in the discovery cohort.

File Name: Supplementary Data 2

Description: Lists of genes leading to the enrichment of pathways in the discovery cohort: motif gene sets (C3).

File Name: Supplementary Data 3

Description: Lists of genes leading to the enrichment of pathways in the discovery cohort: hallmark gene sets (H).

File Name: Supplementary Data 4

Description: Lists of genes leading to the enrichment of pathways in the discovery cohort: curated gene sets (C2).

File Name: Supplementary Data 5

Description: a) MuTect analysis. b) VarDict analysis.