## **Description of Additional Supplementary Files**

File Name: Supplementary Data 1

Description: The cancer types used in our analysis.

File Name: Supplementary Data 2

Description: The immune related pathway and genes.

File Name: Supplementary Data 3

Description: The overlap of IncRNA-Pathway association between TCGA data and two other datasets

in immune cells.

File Name: Supplementary Data 4

Description: The top ranked 500 IncRNA-pathways across cancer types.

File Name: Supplementary Data 5

Description: The proportion of immune cell infiltration related lncRNAs across cancer types.

File Name: Supplementary Data 6

Description: The p-values for lncRNAs identified in TIMER and CIBERSORT.