**Supplementary information**

Additional files 1: Figure S1.

The variance analysis for differentially expressed genes across the cell samples.



Additional files 2: Figure S2.

The heatmap of top 30 significantly correlated gene.



Additional files 3: Figure S3.

The dot plot of top 30 significantly correlated gene.



Additional files 4: Figure S4.

The main deviations of the cells in the first 35 PCs.



Additional files 5: Table S1.

The primer sequences of the CAF-related gene signature.

Additional files 6: Table S2.

The result of feature genes by the intersection of the stable CAF-related DEGs and the prognosis-related genes.

Additional files 7: Table S3.

The coefficient of the CAF-related gene signature.

Additional files 8: Table S4.

The predicted result of the CMAP database