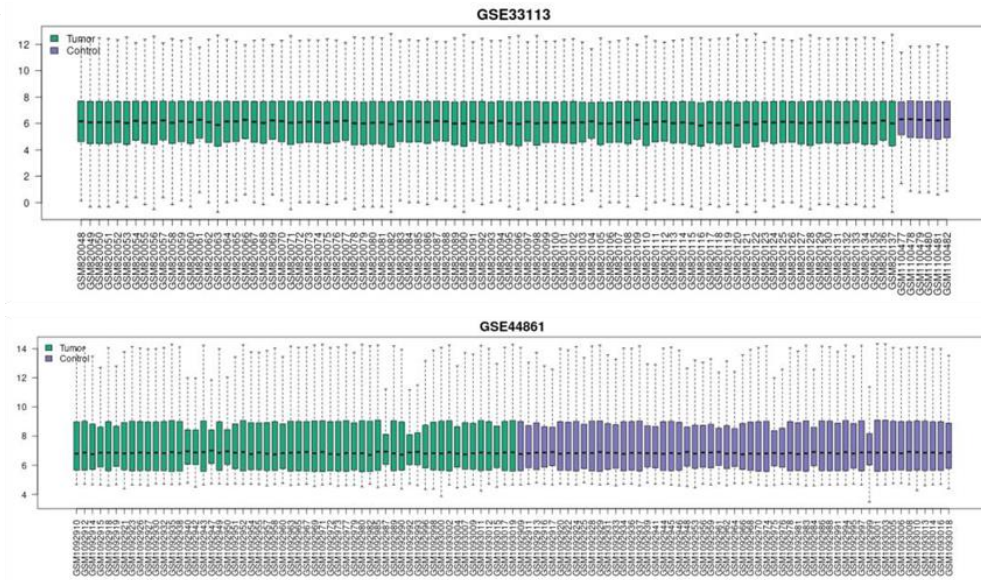
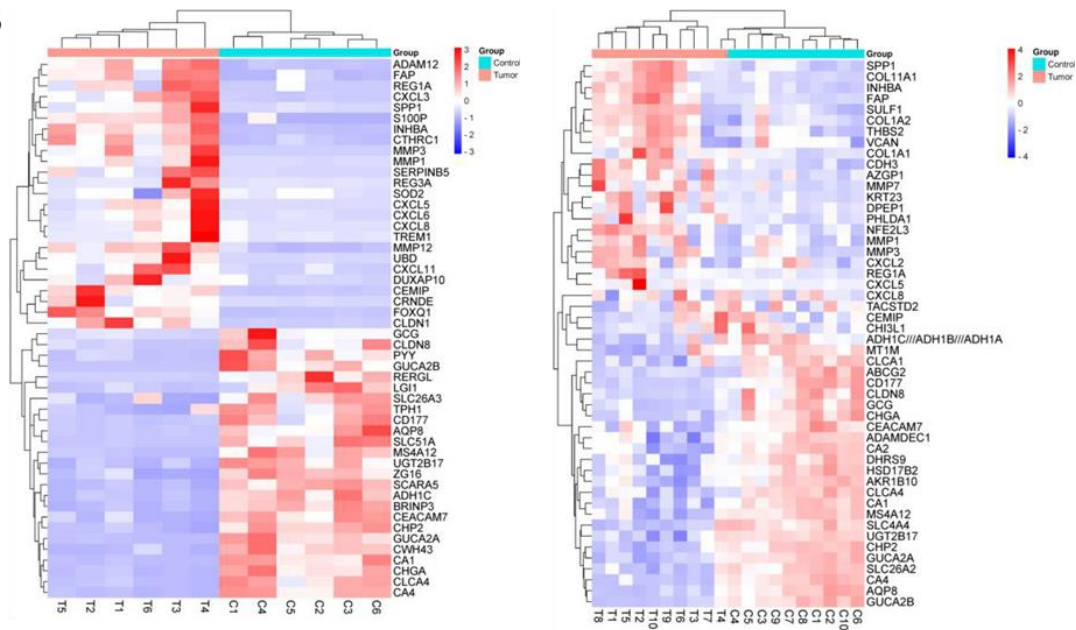
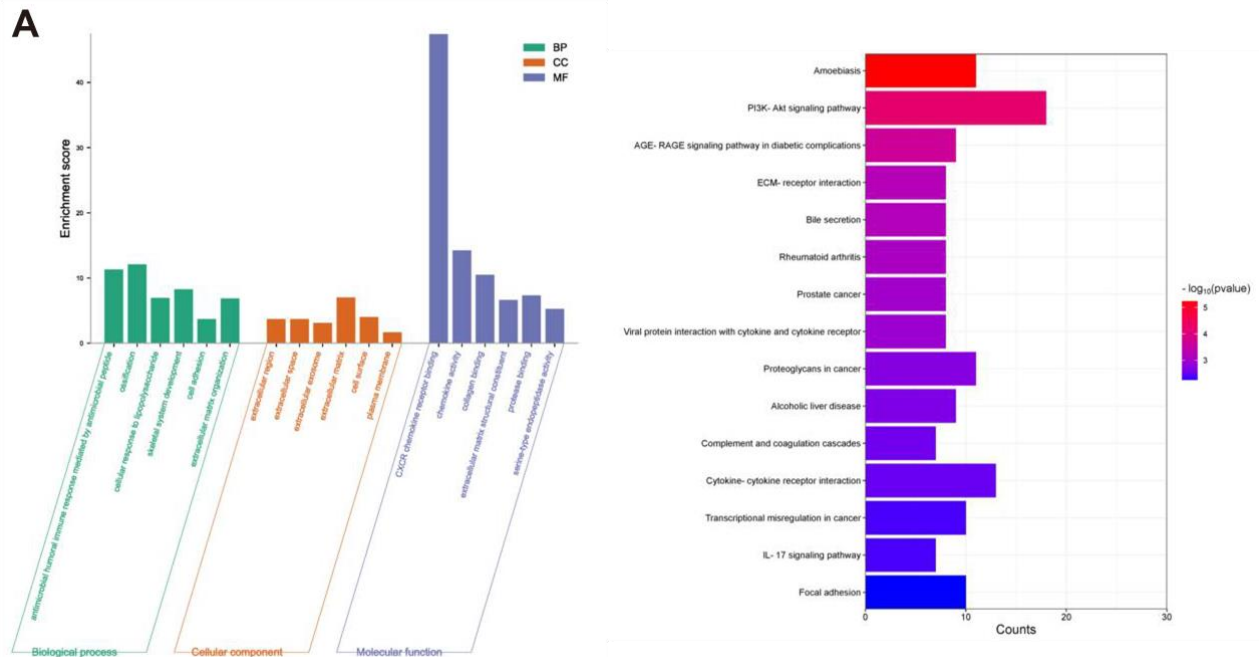
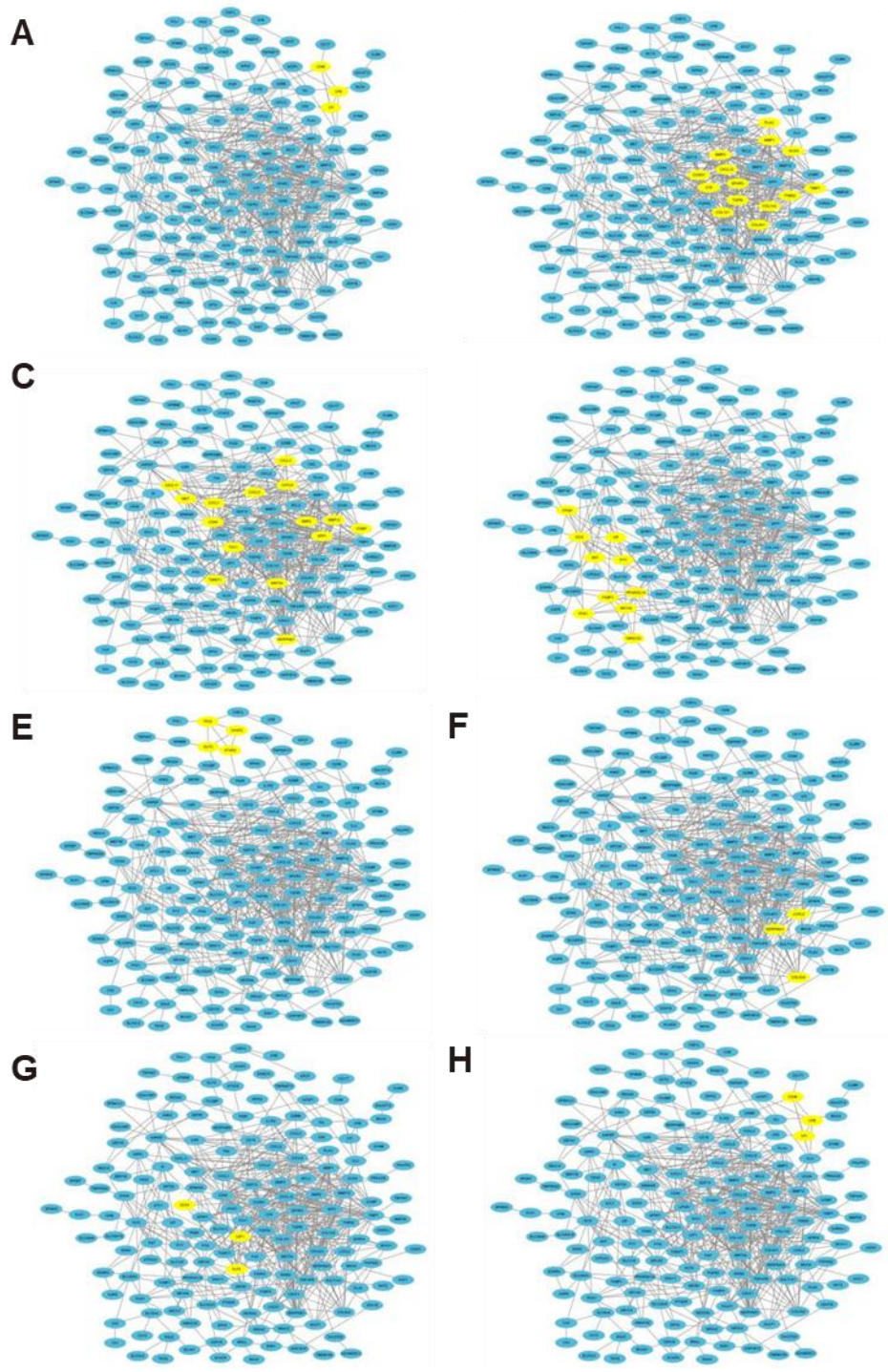


**A****B**

**Supplementary Figure 1 GSE33113 and GSE44861 dataset normalization and cluster analysis of differentially expressed genes.** A: Boxplot of the results of data correction in the GSE33113 and GSE44861 datasets; B: Heatmap of DEGs between tumor and control in the GSE33113 and GSE44861 datasets. Genes are indicated horizontally with one sample per column. Red color indicates highly expressed genes and blue color indicates lowly expressed genes.

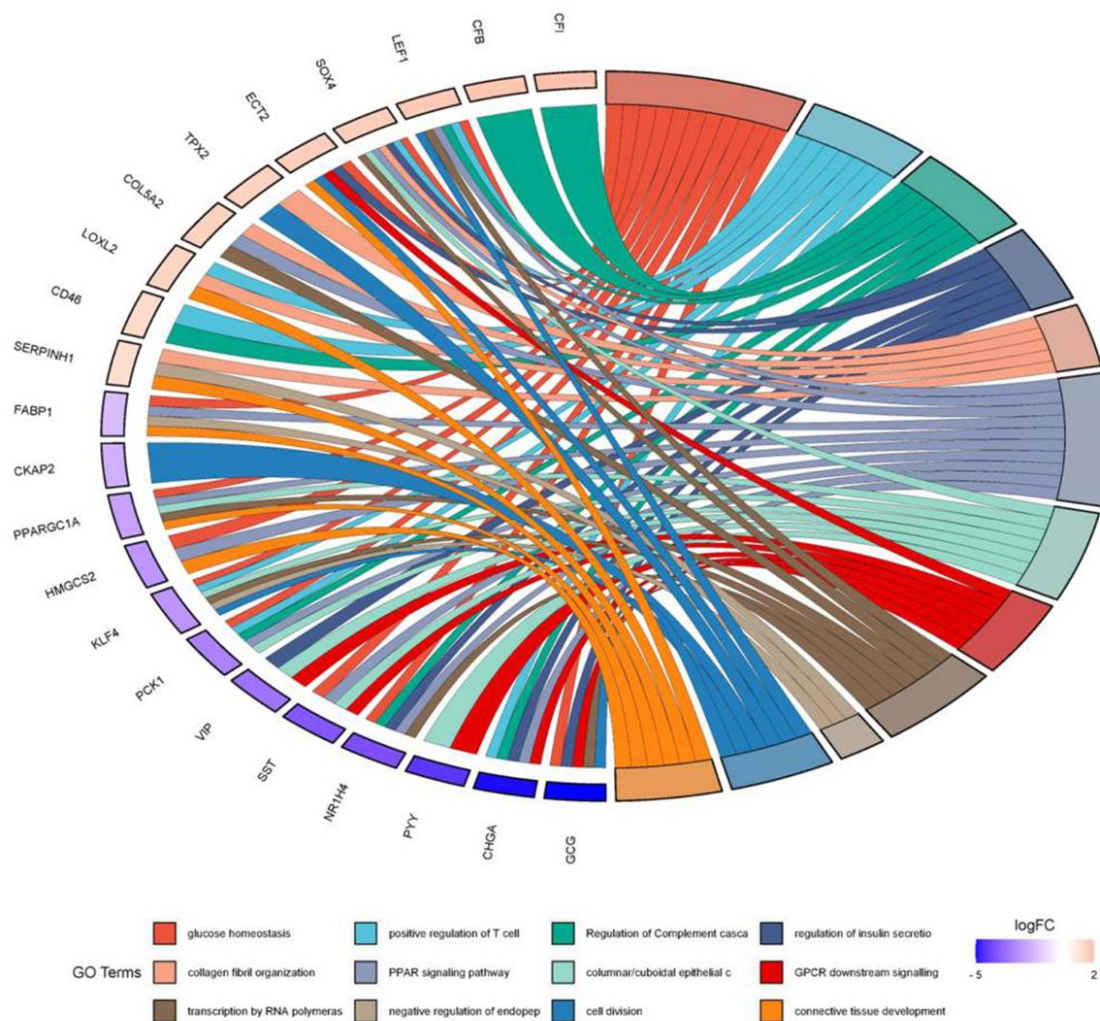


**Supplementary Figure 2 Functional enrichment analysis of differentially expressed genes.** A: GO histogram with GO terms in the horizontal coordinate and  $-\log_{10}(P \text{ value})$  in the vertical coordinate; B: KEGG histogram with pathway name in the vertical coordinate and  $-\log_{10}(P \text{ value})$  in the horizontal coordinate. GO: Gene Ontology; KEGG: Kyoto Encyclopedia of Genes and Genomes.

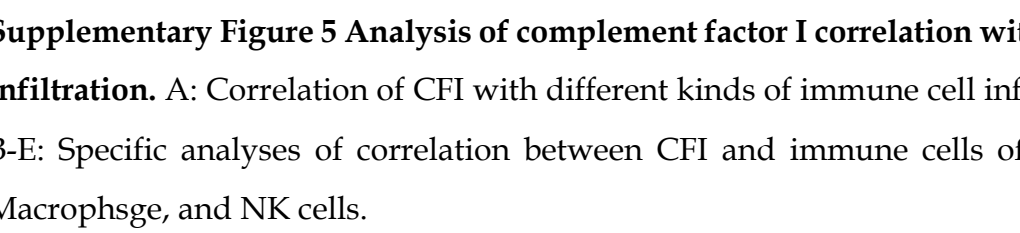
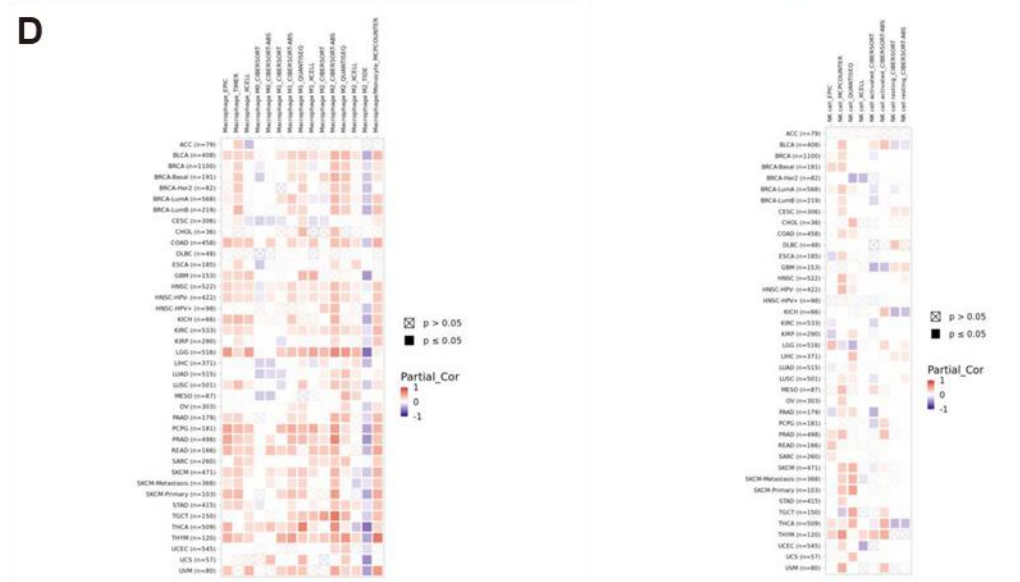
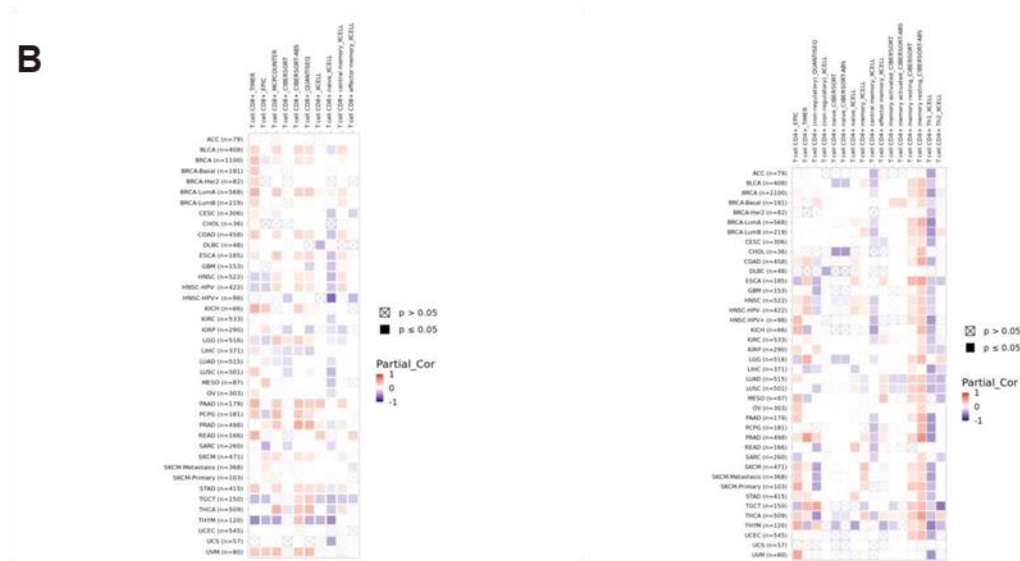
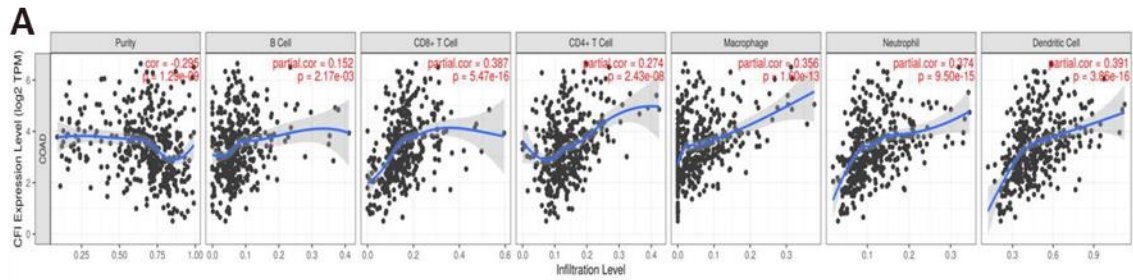


**Supplementary Figure 3 Screening of key modules.** A: Panoramic view of the protein interaction network composed of all differentially expressed genes (DEGs); B-H: Highly interconnected hub gene clusters identified based on MCODE analysis. MCODE: molecular complex detection.





**Supplementary Figure 4** String diagram of Gene Ontology enrichment analysis of hub genes.



**Supplementary Figure 5 Analysis of complement factor I correlation with immune cell infiltration.** A: Correlation of CFI with different kinds of immune cell infiltration in CC; B-E: Specific analyses of correlation between CFI and immune cells of CD8+, CD4+, Macrophage, and NK cells.

**Supplementary Table 1 Primer sequences used in this study**

<b>Primer name</b>	<b>Sequence (5'-3')</b>
GAPDH-F	CTCATGACCACAGTCCATGC
GAPDH-R	TTCAGCTCTGGGATGACCTT
CFI-F	CTCAGCAGACAAAGAC
CFI-R	GTGGAAGCACAAAATAAC
CFB-F	GGAAGGGAATGTGACCAGG
CFB-R	AAGGCAGGAGAGAAGCTGG
FABP1-F	GTCCAAAGTGATCCAAAACGAA
FABP1-R	CGGTCACAGACTTGATGTTTTT
LEF1-F	GGGTGGTCTTGGACAGATCAC
LEF1-R	GGAGGACCGGCAATCATTGA
SOX4-F	CCCAGCAAGAAGGCGAGTTA
SOX4-R	CATCGGCCAAATTCGTCACC
BMP2-F	GCCTTAAGTCCAGCTGTAAGAGAC
BMP2-R	GTACAGCATCGAGATAGCACTGAG