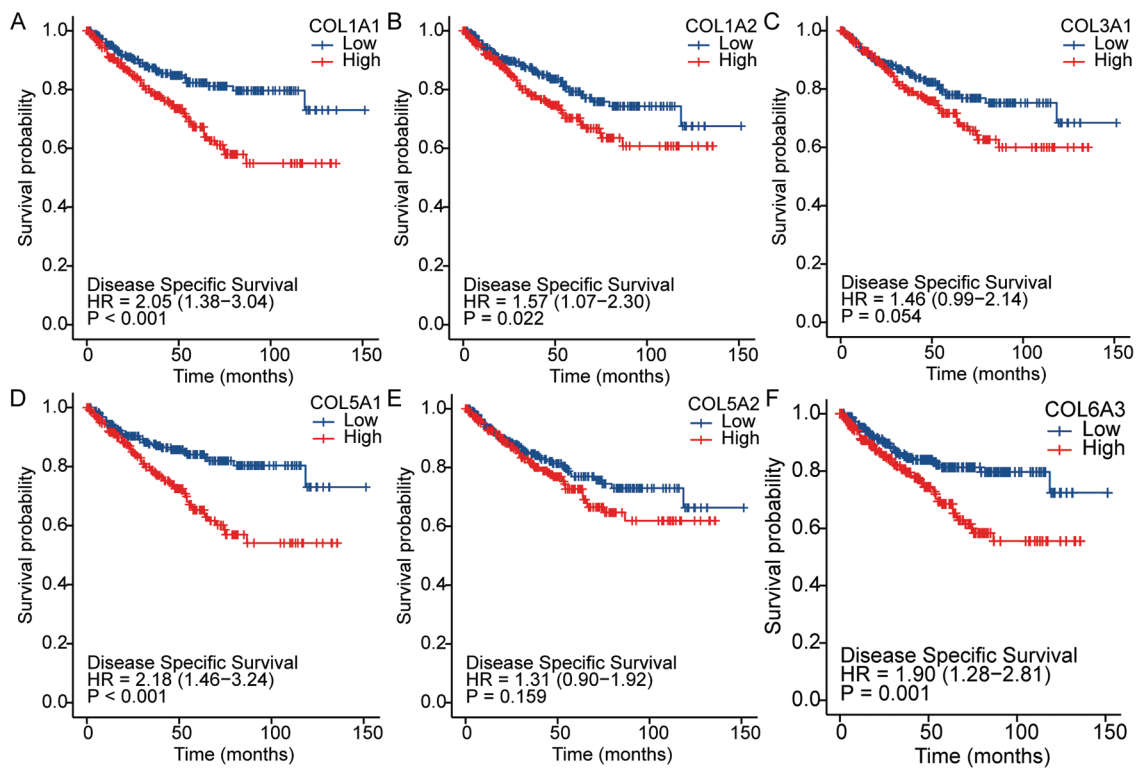
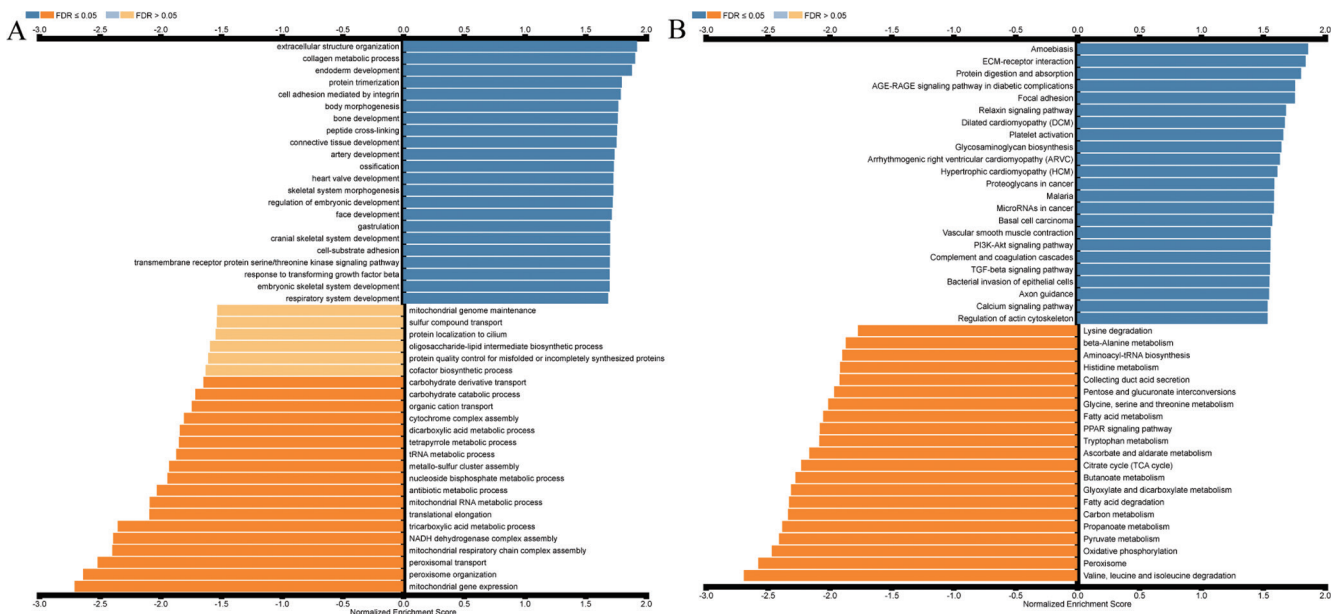


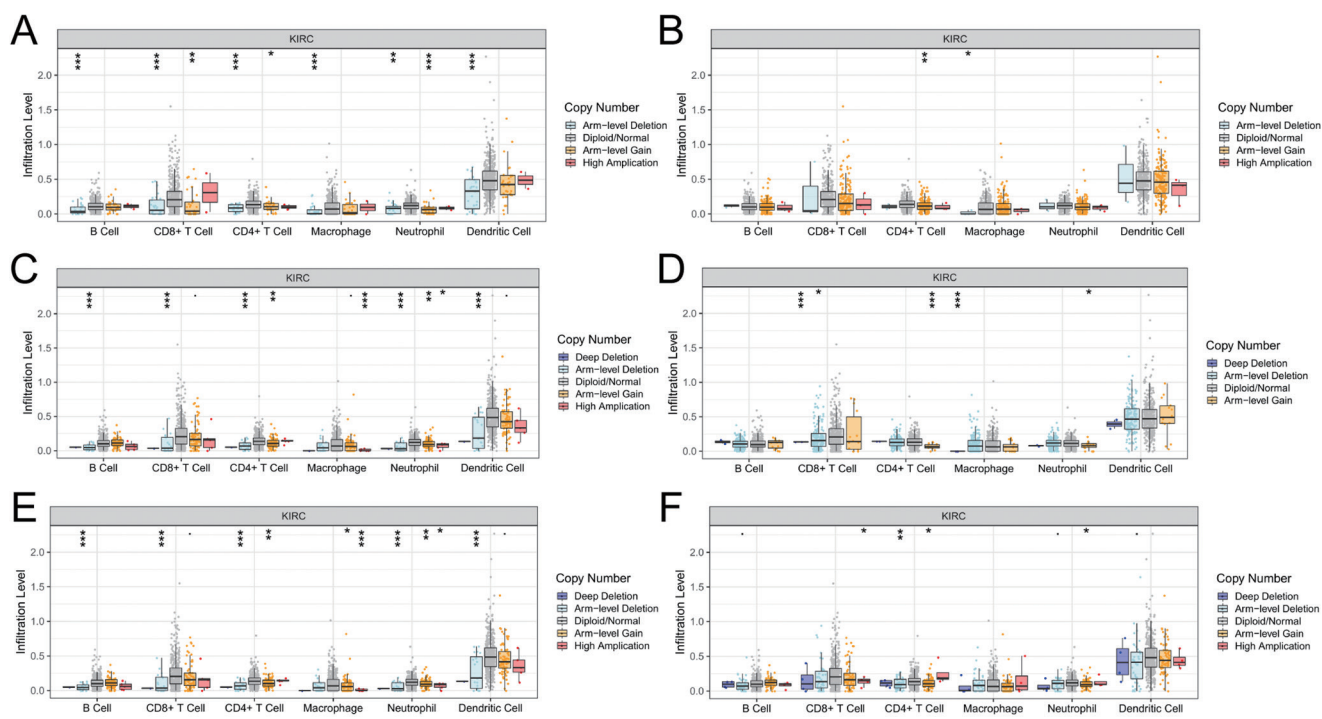
**Figure S1** Collagen gene mutation analysis in ccRCC (cBioPortal). (A) Collagen gene mutation in renal cell carcinoma. (B) collagen family mutation. (C-H) Different collagens mutation. (C) COL1A1. (D) COL1A2. (E) COL3A1. (F) COL5A1. (G) COL5A2. (H) COL6A3.



**Figure S2** The prognostic value of collagen family in ccRCC (KM plotter). (A) COL1A1. (B) COL1A2. (C) COL3A1. (D) COL5A1. (E) COL5A2. (F) COL6A3. HR, Hazard Ratio; DSS, disease-specific survival.



**Figure S3** GSEA analysis of COL5A1 (LinkedOmics). (A) GO (Biological Process) analysis of the genes significantly correlated with COL5A1. (B) KEGG analysis of the genes significantly correlated with COL5A1.



**Figure S4** Somatic copy numbers' alterations in the collagen family members (TIMER). (A) COL1A1. (B) COL1A2. (C) COL3A1. (D) COL5A1. (E) COL5A2. (F) COL6A3. \*,  $P < 0.05$ ; \*\*,  $P < 0.01$ ; \*\*\*,  $P < 0.001$ .



**Figure S5** Correlation analysis between collagen family and tumor drug resistance (GSCALite).