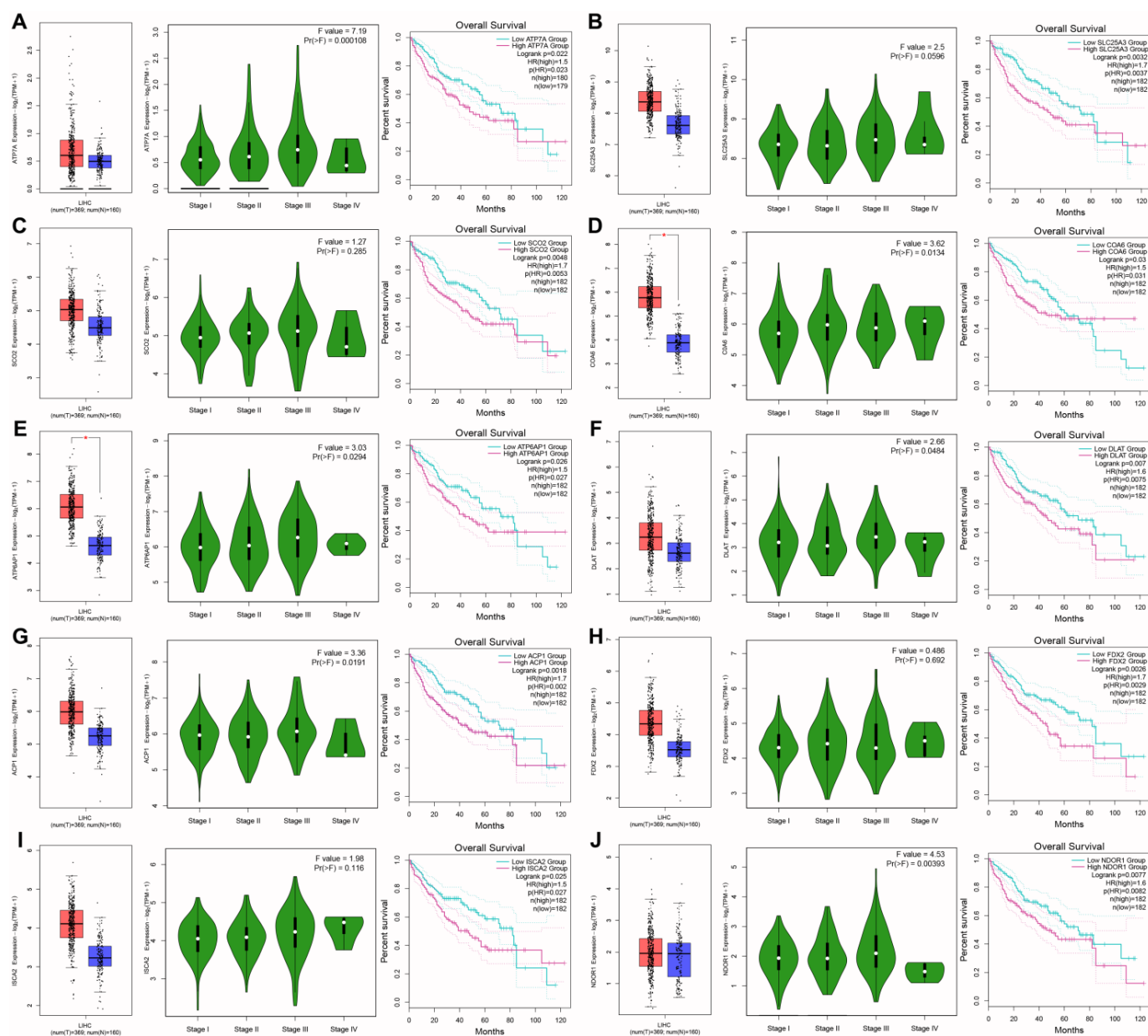


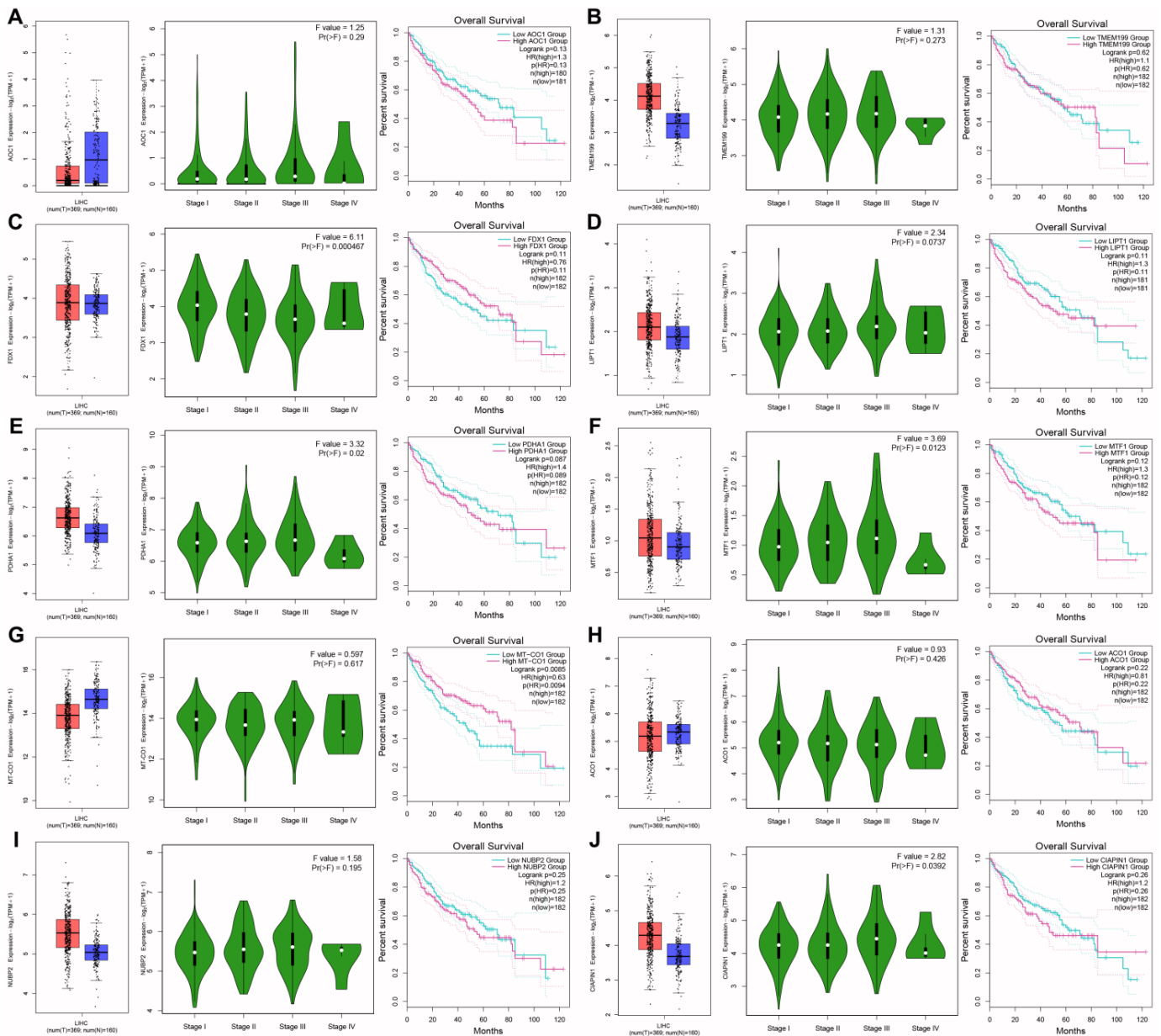
Supplementary Figure 1. The correlation between ten cuproptosis-related gene expression levels and various clinicopathological features in hepatocellular carcinoma (HCC) patients using Wilcoxon signed-rank test or Kruskal-Wallis test from the TCGA database.

The correlation between various clinicopathological features and cuproptosis-related genes expression levels in HCCs, including *SLC25A3* (A), *SCO2* (B), *AOC1* (C), *PDHA1* (D), *MTF1* (E), *MT-CO1* (F), *ACO1* (G), *FDX2* (H), *NUBP2* (I), and *CIAPIN1* (J). (Note: ACO1, aconitase 1; AOC1, amine oxidase copper containing 1; CIAPIN1, cytokine induced apoptosis inhibitor 1; FDX2, ferredoxin 2; G, histologic grade; HCC, hepatocellular carcinoma; M, distant metastasis; MT-CO1, mitochondrially encoded cytochrome c oxidase I; MTF1, metal regulatory transcription factor 1; N, lymph node metastasis; NUBP2, nucleotide binding protein 2; PDHA1, pyruvate dehydrogenase E1 subunit alpha 1; SCO2, synthesis of cytochrome c oxidase 2; SLC25A3, solute carrier family 25 member 3; Stage, clinical stage; T, tumor stage; TCGA, The Cancer Genome Atlas; “*”, $P < 0.05$; “**”, $P < 0.01$; “***”, $P < 0.001$.)



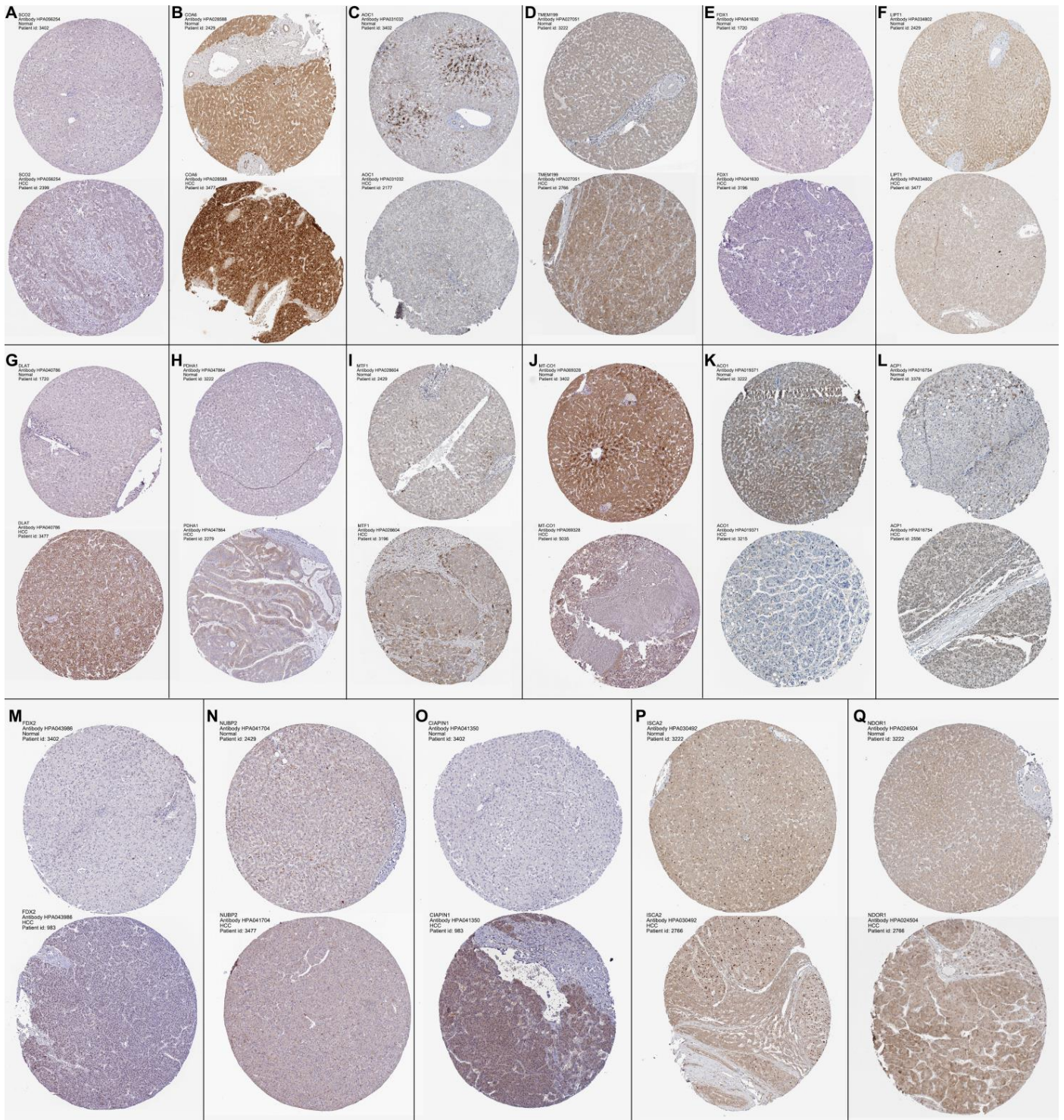
Supplementary Figure 2. The test about mRNA expressions of ten cuproptosis-related genes in the boxplot, clinical stage, and overall survival in hepatocellular carcinoma (HCC) by GEPIA2 database.

The cuproptosis-related gene including *ATP7A* (A), *SLC25A3* (B), *SCO2* (C), *COA6* (D), *ATP6AP1* (E), *DLAT* (F), *ACP1* (G), *FDX2* (H), *ISCA2* (I), and *NDOR1* (J). (Note: ACP1, acid phosphatase 1; ATP6AP1, ATPase H⁺ transporting accessory protein 1; ATP7A, copper-transporting p-type adenosine triphosphatase 1; COA6, cytochrome c oxidase assembly factor 6; DLAT, dihydrolipoamide S-acetyltransferase; FDX2, ferredoxin 2; HCC, hepatocellular carcinoma; ISCA2, iron-sulfur cluster assembly 2; NDOR1, NADPH dependent diflavin oxidoreductase 1; SCO2, synthesis of cytochrome c oxidase 2; SLC25A3, solute carrier family 25 member 3; GEPIA2, Gene Expression Profiling Interactive Analysis 2.)



Supplementary Figure 3. The test about mRNA expressions of other ten cuproptosis-related genes in the boxplot, clinical stage, and overall survival in hepatocellular carcinoma (HCC) by GEPIA2 database.

The cuproptosis-related gene including *AOC1* (A), *TMEM199* (B), *FDX1* (C), *LIPT1* (D), *PDHA1* (E), *MTF1* (F), *MT-CO1* (G), *ACO1* (H), *NUBP2* (I), and *CIAPIN1* (J). (Note: ACO1, aconitase 1; AOC1, amine oxidase copper containing 1; CIAPIN1, cytokine induced apoptosis inhibitor 1; FDX1, ferredoxin 1; HCC, hepatocellular carcinoma; LIPT1, lipoyltransferase 1; MT-CO1, mitochondrially encoded cytochrome c oxidase I; MTF1, metal regulatory transcription factor 1; NUBP2, nucleotide binding protein 2; PDHA1, pyruvate dehydrogenase E1 subunit alpha 1; GEPIA2, Gene Expression Profiling Interactive Analysis 2; TMEM199, transmembrane protein 199.)



Supplementary Figure 4. The protein expression of cuproptosis-related genes between HCC and normal liver tissues in the Human Protein Atlas (HPA) database.

The protein expression of cuproptosis-related genes using the same antibody in each HCC patient and normal liver sample from HPA database, including SCO2 (A), COA6 (B), AOC1 (C), TMEM199 (D), FDX1 (E), LIPT1 (F), DLAT (G), PDHA1 (H), MTF1 (I), MT-CO1 (J), ACO1 (K), ACP1 (L), FDX2 (M), NUBP2 (N), CIAPIN1 (O), ISCA2 (P), and NDOR1 (Q). (Note: ACO1, aconitase 1; ACP1, acid phosphatase 1; AOC1, amine oxidase copper containing 1; CIAPIN1, cytokine induced apoptosis inhibitor 1; COA6, cytochrome c oxidase assembly factor 6; DLAT, dihydrolipoamide S-acetyltransferase; FDX1, ferredoxin 1; FDX2, ferredoxin 2; HCC, hepatocellular carcinoma; HPA, Human Protein Atlas; ISCA2, iron-sulfur cluster assembly 2; LIPT1, lipoyltransferase 1; MT-CO1, mitochondrially encoded cytochrome c oxidase I; MTF1, metal regulatory transcription factor 1; NDOR1, NADPH dependent diflavin oxidoreductase 1; NUBP2, nucleotide binding protein 2; PDHA1, pyruvate dehydrogenase E1 subunit alpha 1; SCO2, synthesis of cytochrome c oxidase 2; TMEM199, transmembrane protein 199.)