

Figure S1. Functional and pathway enrichment analyses of metatranscriptome and FEN1 and ENDOU enriched cervical tumors. (A) GO enrichment analysis of the metatranscriptome signature. (B) GSEA and KEGG pathway enrichment analysis in cervical tumors expressing high levels of FEN1. (C) GSEA and KEGG pathway enrichment analysis in cervical tumors expressing low levels of ENDOU. FEN1, flap structure-specific endonuclease 1; ENDOU, poly (U)-specific endoribonuclease; GO, Gene Ontology; GSEA, Gene Set Enrichment Analysis; KEGG, Kyoto Encyclopedia of Genes and Genomes.

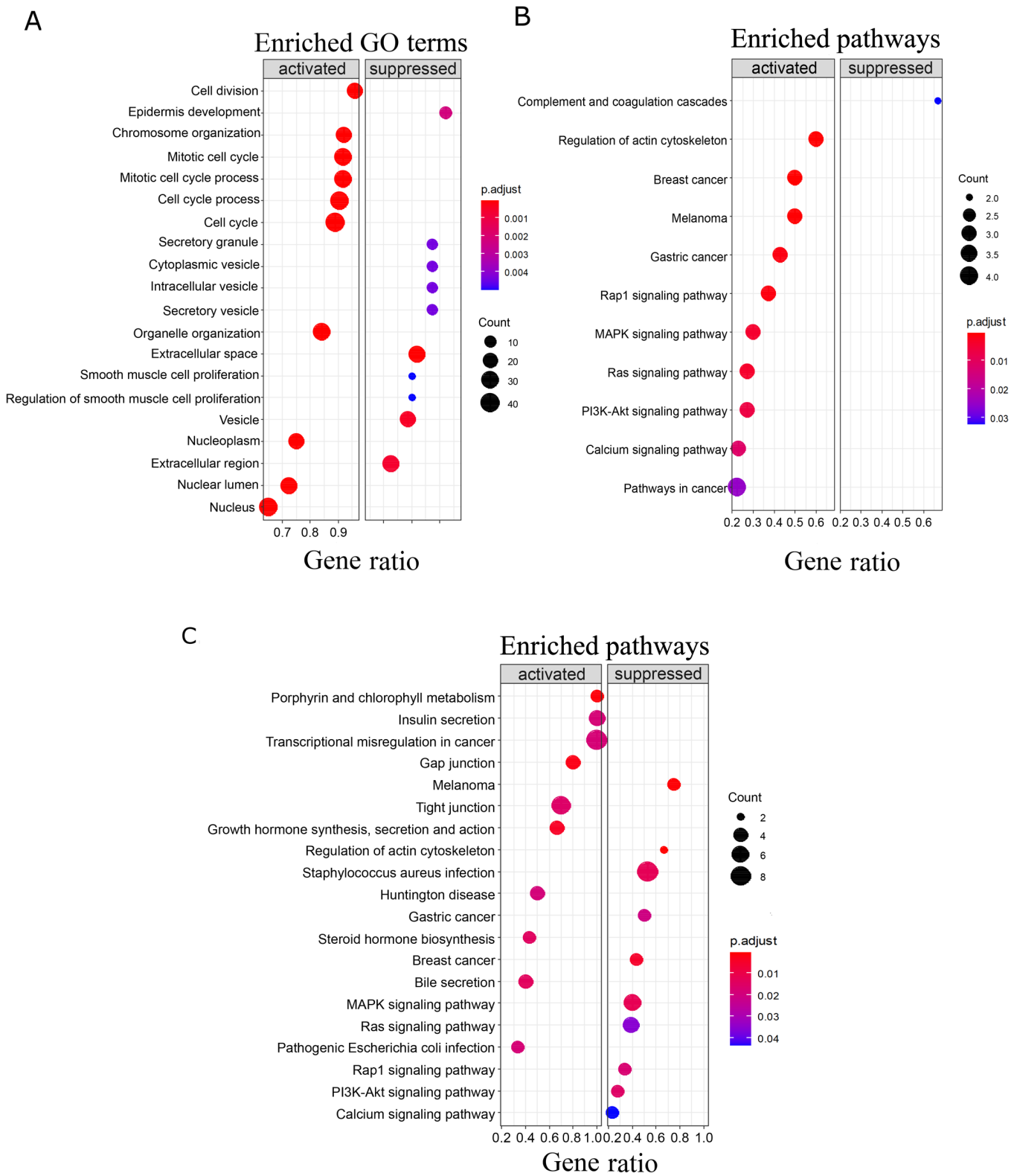


Figure S2. PAN cancer analysis of candidate biomarkers. (A) Expression pattern of FEN1 in different types of human cancer. (B) Expression pattern of ENDOU in different types of human cancer. (C) Upregulated FEN1 expression is a prognostic marker in different carcinomas. Differential expression of candidate biomarker (FEN1, ENDOU) between tumor and adjacent normal tissues (tumor vs normal) across all TCGA tumors. Distributions of gene expression levels are displayed using box plots. Statistical significance computed by the Wilcoxon test: \*\*P<0.01 and \*\*\*P<0.001. FEN1, flap structure-specific endonuclease 1; ENDOU, poly (U)-specific endoribonuclease; TCGA, The Cancer Genome Atlas.

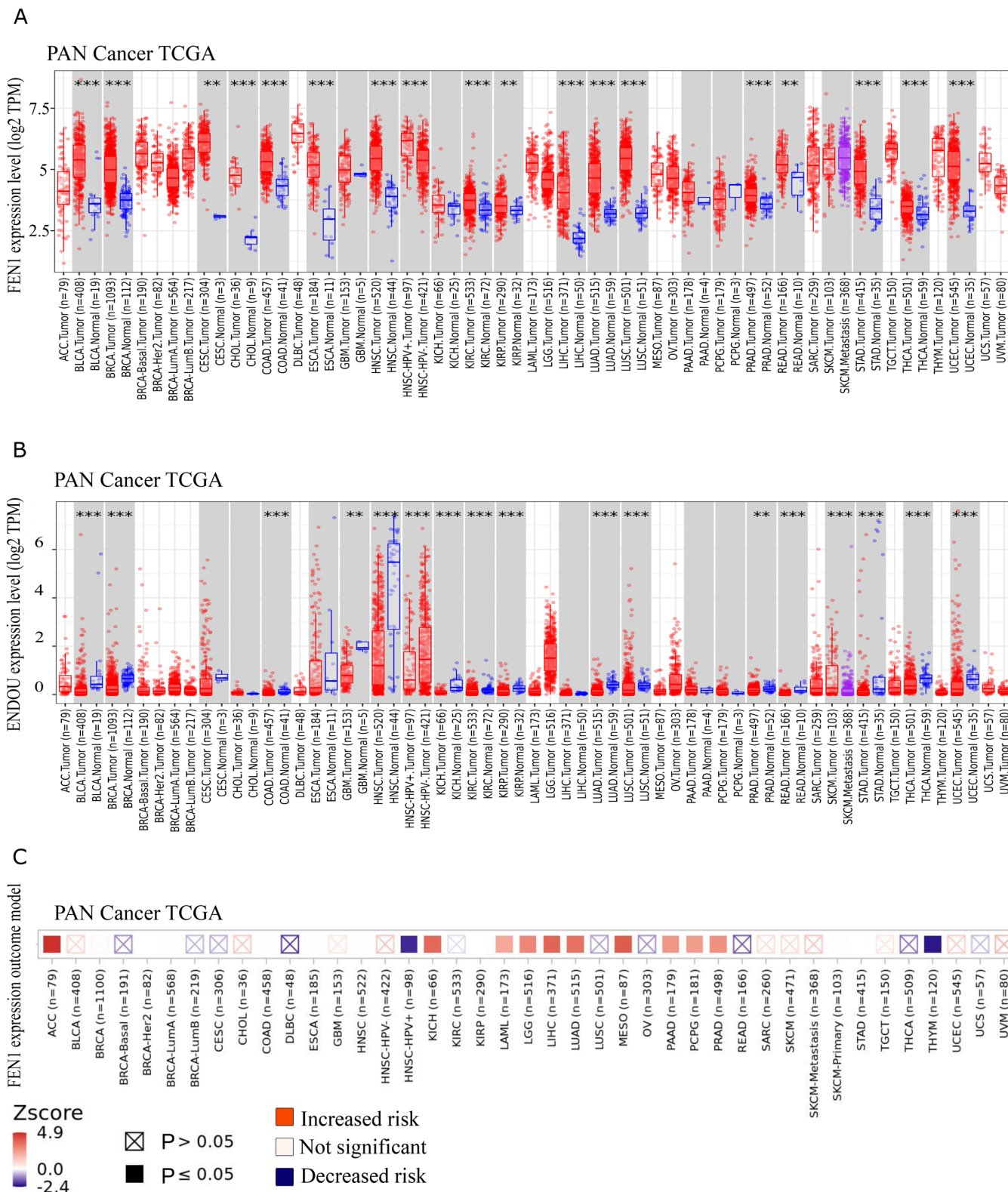


Figure S3. Association between FEN1 expression and overall survival in TCGA-CESC-SCC patients stratified according to the administrated treatment. (A) Kaplan-Meier survival curve for all patients with SCC with reported adjuvant chemotherapy treatment status prior to stratification to not treated and treated. (B) Kaplan-Meier survival curve for patients not treated with adjuvant chemotherapy. (C) Kaplan-Meier survival curve for patients treated with adjuvant chemotherapy. (D) Kaplan-Meier survival curve for all patients with SCC with reported radiation treatment status prior to stratification to not treated and treated. (E) Kaplan-Meier survival curve for patients not treated with radiation therapy. (F) Kaplan-Meier survival curve for patients treated with radiation therapy. FEN1, flap structure-specific endonuclease 1; TCGA, The Cancer Genome Atlas; CESC, cervical squamous cell carcinoma and endocervical adenocarcinoma; SCC, squamous cell carcinoma; CI, confidence interval; HR, hazard ratio.

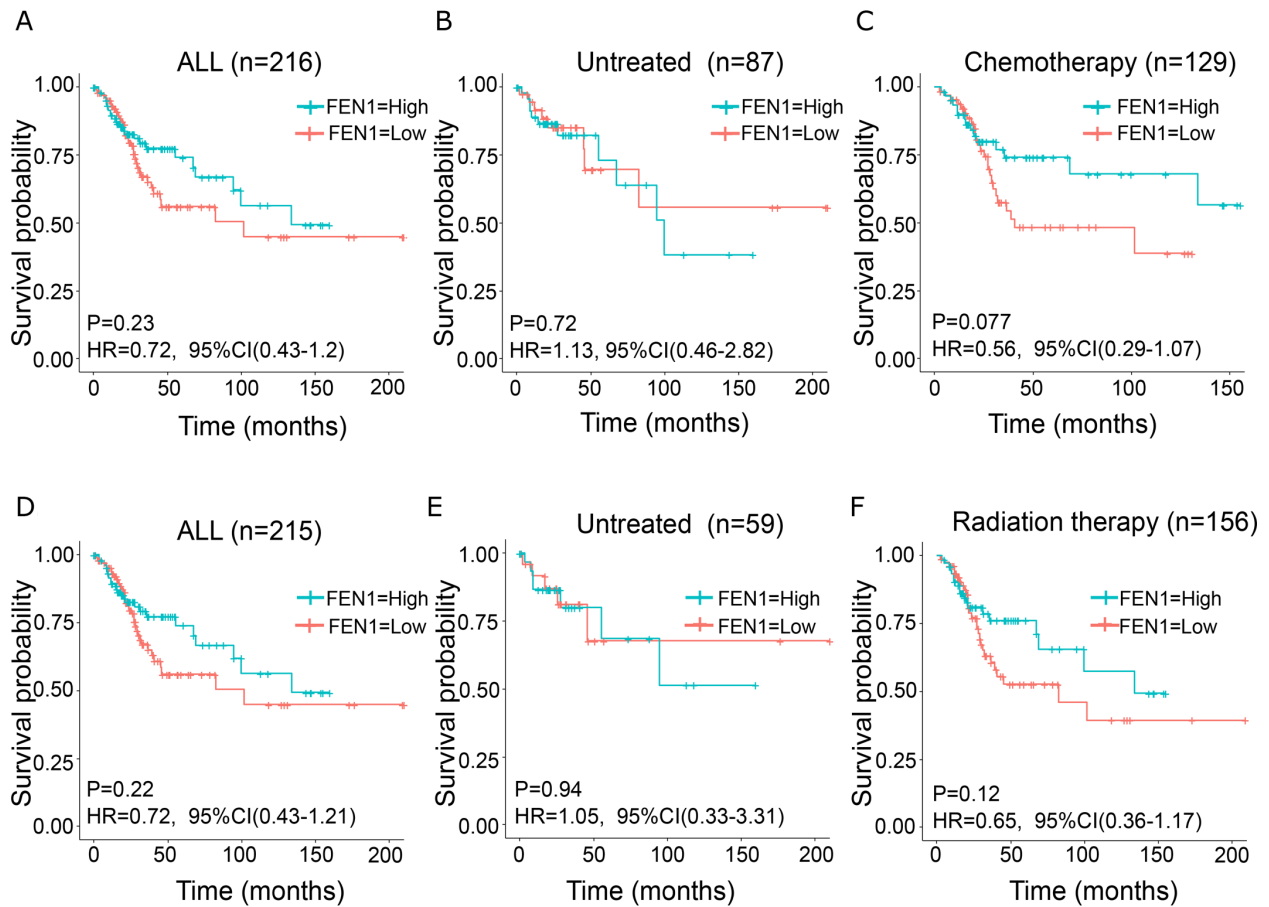


Figure S4. High G<sub>2</sub>/M score in cervical tumors is associated with favorable clinical outcome. (A) Kaplan-Meier survival curve for all patients with SCC with reported adjuvant chemotherapy treatment status prior to stratification to not treated and treated. (B) Kaplan-Meier survival curve for patients not treated with adjuvant chemotherapy. (C) Kaplan-Meier survival curve for patients treated with adjuvant chemotherapy. (D) Kaplan-Meier survival curve for all patients with SCC with reported radiation treatment status prior to stratification to not treated and treated. (E) Kaplan-Meier survival curve for patients not treated with radiation therapy. (F) Kaplan-Meier survival curve for patients treated with radiation therapy. SCC, squamous cell carcinoma; CI, confidence interval; HR, hazard ratio.

