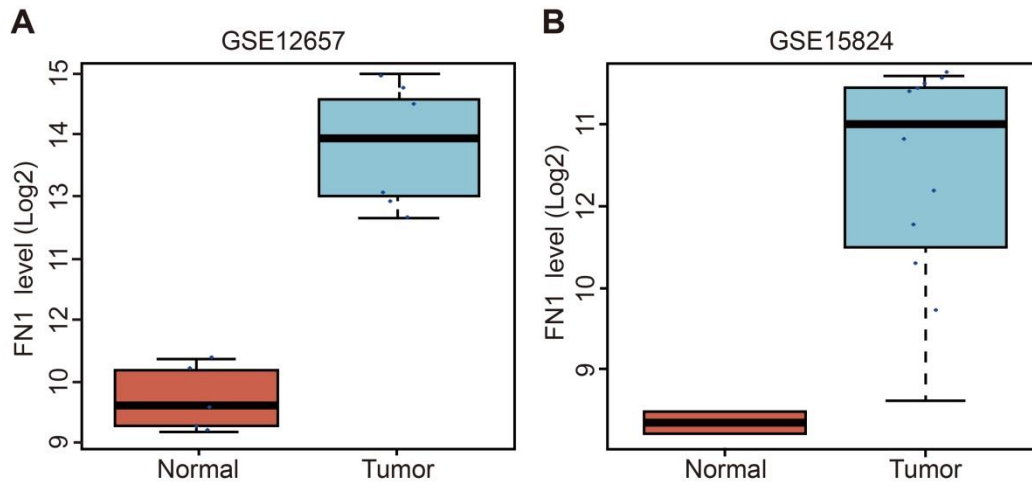


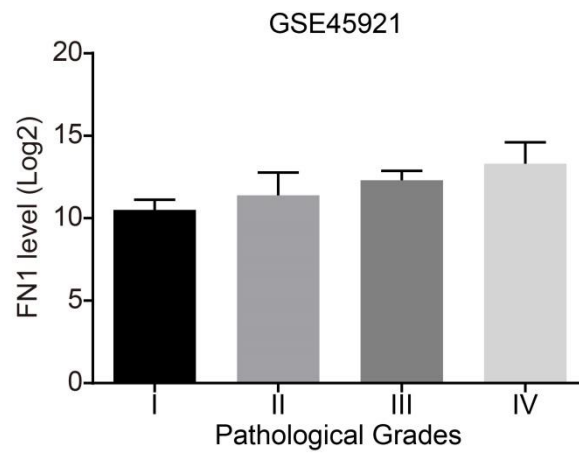
Supplementary Figure 1 Heat maps of differentially expressed genes between both tumor and normal tissues in the expression profiles of glioma (GSE12657) (A) and breast cancer (GSE15852) (B)

Note: Each column represents a sample, and each row represents a DEG; The color key (top right corner): each rectangle represents an expression profile for one sample, the red strip represents high relative expression, and the green strip represents low relative expression; DEG, differentially expressed gene.



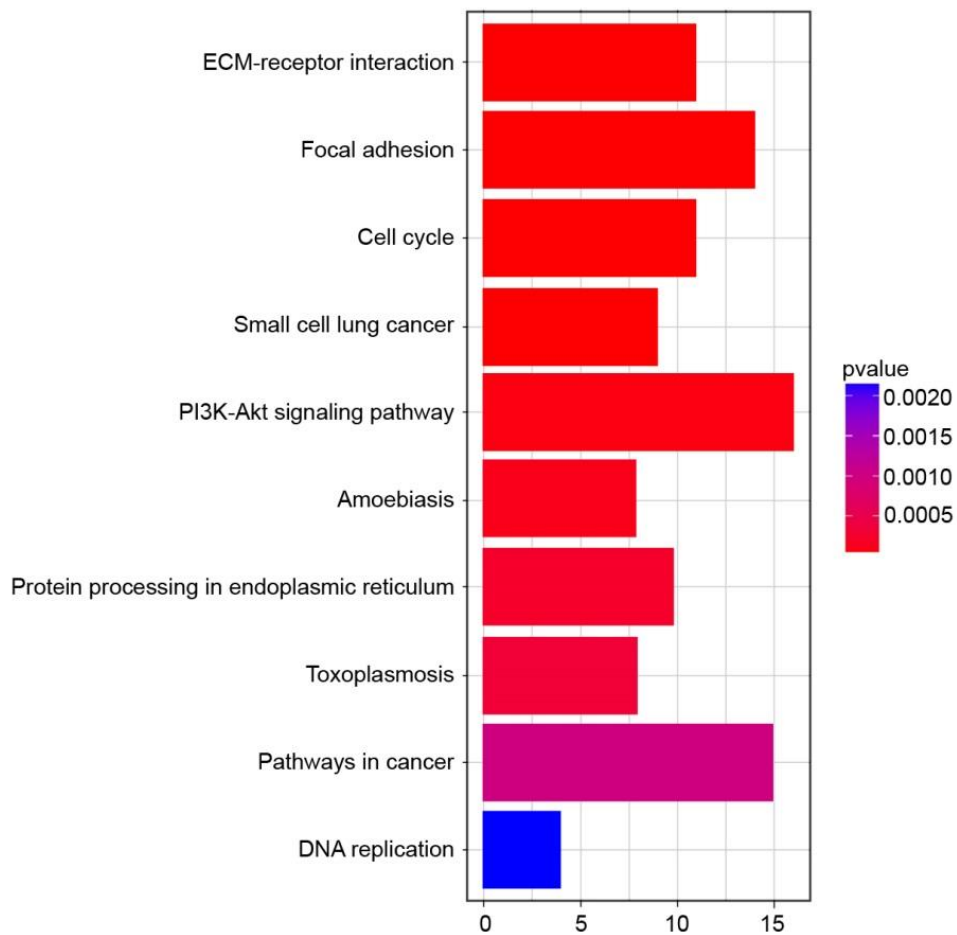
Supplementary Figure 2 Comparison of FN1 gene expression between tumor tissues and normal tissues in the expression profiles of glioma (GSE12657) (A) and (GSE15824) (B)

Note: FN1, fibronectin 1.



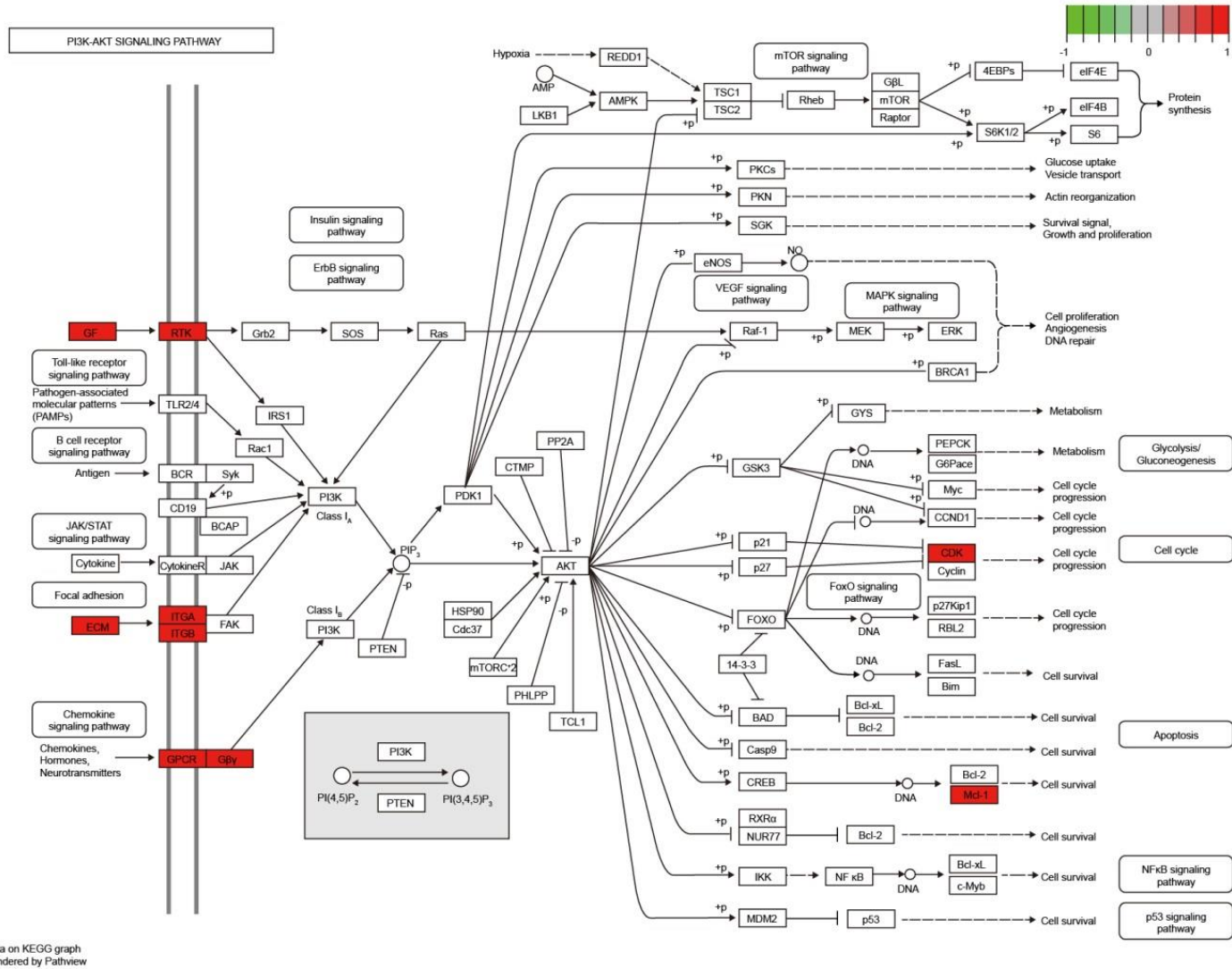
Supplementary Figure 3 Comparison of FN1 gene expression levels in glioma tissues with different pathological grades

Note: FN1, fibronectin 1.



Supplementary Figure 4 The plot of KEGG pathway enrichment analysis for differentially expressed genes in the expression profile of glioma (GSE12657)

Note: X axis: $-\log P$ value; Y axis: signaling pathway. The color key reveals statistical significance (P -value), and the red represents high significance and close correlation.



Supplementary Figure 6 The role of the FN1 gene in the PI3K/AKT signaling pathway

Note: FN1, fibronectin 1.

Supplementary Table 1 GO enrichment analysis for cellular component of differentially expressed genes in expression profile of glioma (GSE12657)

Cellular Component	<i>P</i>	Gene
Basement membrane	2.12E-08	<i>COL4A1/COL4A2/DAG1/FN1/TNC/LAMA4/LAMB1/LAMC1/NID1/TGFBI/NID2</i>
Extracellular matrix component	5.57E-08	<i>COL4A1/COL4A2/COL5A2/DAG1/FN1/TNC/LAMA4/LAMB1/LAMC1/NID1/TGFBI/NID2</i>
Microtubule organizing center	1.38E-05	<i>CCNB1/CDC25B/CDK2/CENPF/CSNK1A1/FLII;RAB8A/NUBP1/NFE2L2/ODF2/PCNA/RP2/SLC16A1</i> <i>/TOP2A/YES1/CCNB2/MAPKAPK2/KATNA1/MAPRE1/LAS1L</i>
Endoplasmic reticulum part	1.98E-05	<i>ALDH3A2/CALU/CAPN2/CAV1/SERPINH1/COL4A1/COL4A2/COL5A2/COPB1/GPX7/LBR/MEST/PROS1/RPN1/RPN2</i> <i>/SEC13/SSR1/SSR2/SSR4/PLOD3/COPB2/RAB9A/PDIA4/LMAN2/KDEL2/TOR1B/SUCO/ATP10D/ALG8</i>
Basal lamina	2.47E-05	<i>FN1/LAMA4/LAMB1/LAMC1/NID1</i>
Chromosome	3.70E-05	<i>ACTL6A/CAPN2/CCNB1/CDK2/CENPF/CSNK1A1/EZH2/HDAC1/HMGB2/HMGNI/MCM2/NASP/NFE2L2/PCNA</i> <i>/RBBP4/RECQL/RFC4/SEC13/SFPQ/TOP2A/BAZ1B/GINS1/SMC4/NDC80/CBX3/ZNF330</i>
Extracellular matrix	3.94E-05	<i>COL4A1/COL4A2/COL5A2/DAG1/FN1/TNC/LAMA4/LAMB1/LAMC1/LGALS3BP/RAB8A/NID1</i> <i>/SERPINE1/RPN1/RPS15A/SFPQ/TGFBI/VWF/NID2</i>
Chromosomal part	4.27E-05	<i>ACTL6A/CAPN2/CCNB1/CDK2/CENPF/CSNK1A1/EZH2/HDAC1/HMGB2/HMGNI/MCM2/NASP/NFE2L2</i> <i>/PCNA/RBBP4/RFC4/SEC13/SFPQ/BAZ1B/GINS1/SMC4/NDC80/CBX3/ZNF330</i>
Nucleoplasm	5.61E-05	<i>ACTL6A/BARD1/CASP3/CCNB1/CDC25B/CDK2/CENPF/CLK3/CSNK1A1/DAG1/EZH2/FLII/HDAC1/HDGF/HMGB2/HMG</i> <i>NI/HNRNPAB/ID3/LMNB1/MCL1/MCM2/NASP/NONO/PAK2/PCNA/RBBP4/RECQL/RFC4/RPS15A/SEC13/SFPQ/SNRPF/S</i> <i>NRPG/SP3/TOP2A</i>
Centrosome	6.28E-05	<i>CCNB1/CDC25B/CDK2/CENPF/CSNK1A1/RAB8A/NUBP1/NFE2L2/ODF2/PCNA/RP2/SLC16A1/TOP2A/CCNB2/</i> <i>MAPKAPK2/MAPRE1</i>

Note: FN1, fibronectin 1.

Supplementary Table 2 GO enrichment analysis for molecular function of differentially expressed genes in expression profile of glioma (GSE12657)

Molecular Function	<i>P</i>	Gene
Collagen binding	3.21E-07	<i>SERPINH1/FN1/ITGA1/ITGB1/NID1/TGFBI/VWF/MRC2/NID2</i>
Enhancer sequence-specific DNA binding	0.000485936	<i>ACTL6A/HDAC1/HMGB2/NFE2L2/NONO/RBBP4/SFPQ</i>
Phosphate ion binding	0.000520283	<i>4ACTL6A0/MTHFD2/GNG12</i>
Extracellular matrix structural constituent	0.000770114	<i>COL4A1/COL4A2/COL5A2/LAMA4/LAMB1/LAMC1</i>
RNA polymerase II distal enhancer sequence-specific DNA binding	0.000947208	<i>ACTL6A/HDAC1/NFE2L2/NONO/RBBP4/SFPQ</i>
Enhancer binding	0.001155402	<i>ACTL6A/HDAC1/HMGB2/NFE2L2/NONO/RBBP4/SFPQ</i>
Peptidase regulator activity	0.001720697	<i>CASP3/CAV1/SERPINH1/FN1/SERPINE1/PROS1/TFPI/PTTG1/PSME4</i>
Transferase activity, transferring glycosyl groups	0.001817006	<i>GBE1/4ACTL6A0/5CASP3/RPN1/RPN2/UMPS/PLOD3/ZC3HAV1/ALG8</i>
Histone deacetylase activity	0.001902175	<i>HDAC1/RBBP4/SAP30/HDAC3</i>
Nucleosomal DNA binding	0.001902175	<i>ACTL6A/HDAC1/HMGN1/RBBP4</i>

Note: FN1, fibronectin 1.

Supplementary Table 3 GO enrichment analysis for biological process of differentially expressed genes in expression profile of glioma (GSE12657)

Biological Process	<i>P</i>	Gene
Extracellular structure organization	2.27E-07	<i>CAPN2/SERPINH1/COL4A1/COL4A2/COL5A2/DAG1/FN1/TNC/ITGA1/ITGB1/LAMA4/LAMB1/LAMC1/NID1/SERPINE1/PECAM1/TGFBI/VWF/PLOD3/PRDX4/NID2</i>
Mitotic nuclear division	0.0001653	<i>CCNB1/CDC25B/CDK2/CENPF/CSNK1A1/PDGFRB/DYNLT1/WEE1/CCNB2/PTTG1/SMC4/NDC80/UBE2C/KATNA1/MAPRE1/TPX2</i>
Cell cycle phase transition	0.0001683	<i>CCNB1/CDC25B/CDK2/CDKN2C/CENPF/CKS2/EZH2/ITGB1/MCM2/RAB8A/ODF2/PCNA/WEE1/CCNB2/NDC80/UBE2C/MAPRE1/TPX2/PHF8</i>
Multicellular organism metabolic process	0.0003151	<i>SERPINH1/COL4A1/COL4A2/COL5A2/F2R/ITGB1/PDGFRB/MRC2/SUCO</i>
DNA conformation change	0.0027839	<i>CCNB1/HMGB2/MCM2/NASP/RBBP4/RECQL/TOP2A/GINS1/SMC4/PSME4</i>
Chromatin remodeling	0.0042551	<i>ACTL6A/HDAC1/NASP/RBBP4/BAZ1B/CBX3/PSME4</i>
Chromosome segregation	0.0052235	<i>CCNB1/CENPF/SEC13/SFPQ/TOP2A/PTTG1/SMC4/NDC80/UBE2C/MAPRE1</i>
DNA recombination	0.005728	<i>ACTL6A/BARD1/HMGB2/NONO/PCNA/RECQL/RFC4/SFPQ/TOP2A</i>
Endoderm development	0.0087476	<i>COL4A2/COL5A2/FN1/LAMB1/LAMC1</i>
Microtubule cytoskeleton organization	0.0099843	<i>CCNB1/CDK2/DAG1/NUBP1/SLC16A1/DYNLT1/WEE1/HDAC3/NDC80/KATNA1/MAPRE1/TPX2</i>

Note: FN1, fibronectin 1.

Supplementary Table 4 KEGG pathway enrichment analysis of differentially expressed genes in expression profile of glioma (GSE12657)

Pathway	<i>P</i>	Gene
ECM-receptor interaction pathway	3.88E-08	COL4A1/COL4A2/DAG1/ FN1 /ITGA1/ITGB1/LAMA4/LAMB1/LAMC1/TNC/VWF
Focal adhesion kinase pathway	1.86E-06	CAPN2/CAV1/COL4A1/COL4A2/ FN1 /ITGA1/ITGB1/LAMA4/LAMB1/LAMC1/PAK2 /PDGFRB/TNC/VWF
Cell cycle-related pathway	2.74E-06	CCNB1/CCNB2/CDC25B/CDK2/CDKN2C/HDAC1/MCM2/MCM7/PCNA/PTTG1/WEE1
Small cell lung cancer-related pathway	4.89E-06	CDK2/CKS2/COL4A1/COL4A2/ FN1 /ITGB1/LAMA4/LAMB1/LAMC1
PI3K-Akt signaling pathway	6.07E-05	ANGPT2/CDK2/COL4A1/COL4A2/F2R/ FN1 /GNG12/ITGA1/ITGB1/LAMA4/LAMB1 /LAMC1/MCL1/PDGFRB/TNC/VWF
Amoebiasis-related pathway	0.0001049	CASP3/COL3A1/COL4A1/COL4A2/ FN1 /LAMA4/LAMB1/LAMC1
Pathway of protein processing in endoplasmic reticulum	0.0002207	CAPN2/LMAN2/NFE2L2/PDIA4/RPN1/RPN2/SEC13/SSR1/SSR2/SSR4
Toxoplasmosis-related pathway	0.0003262	CASP3/IL10RB/IRAK1/ITGB1/LAMA4/LAMB1/LAMC1/4615
Pathways in cancer	0.000987	CASP3/CDK2/CKS2/COL4A1/COL4A2/EDNRA/F2R/ FN1 /GNG12/HDAC1/ITGB1 /LAMA4/LAMB1/LAMC1/PDGFRB
DNA replication-related pathway	0.0021379	MCM2/MCM7/PCNA/RFC4

Note: FN1, fibronectin 1; ECM, extracellular matrix.