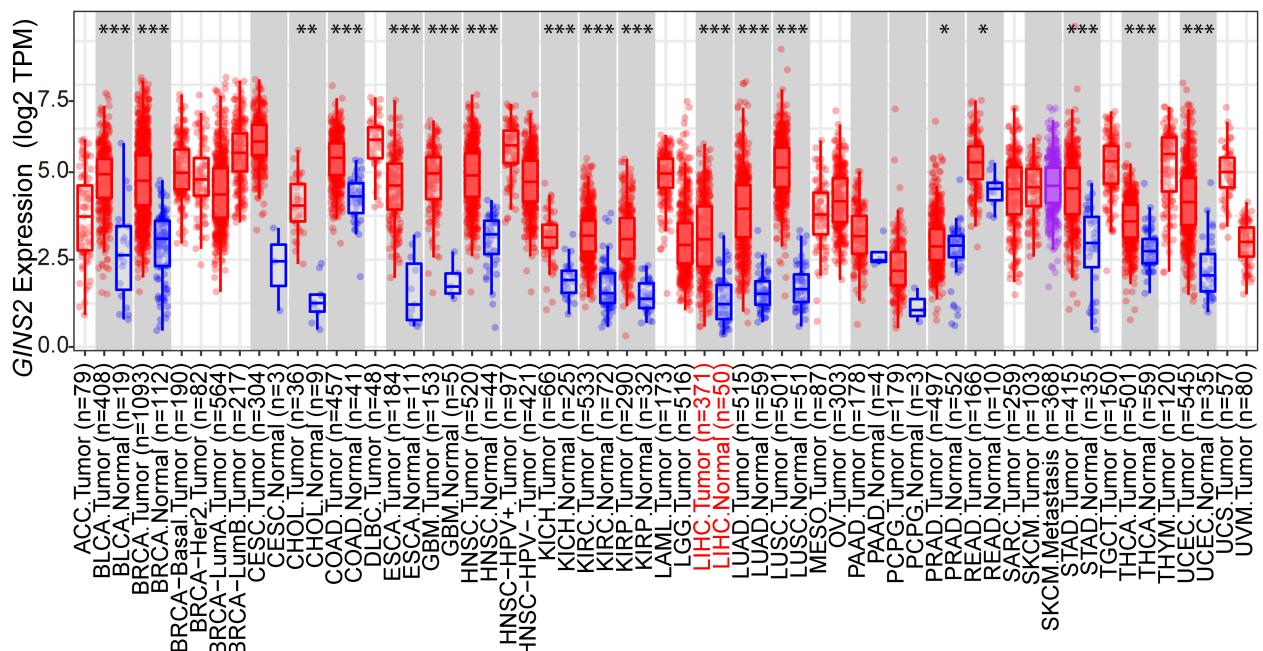


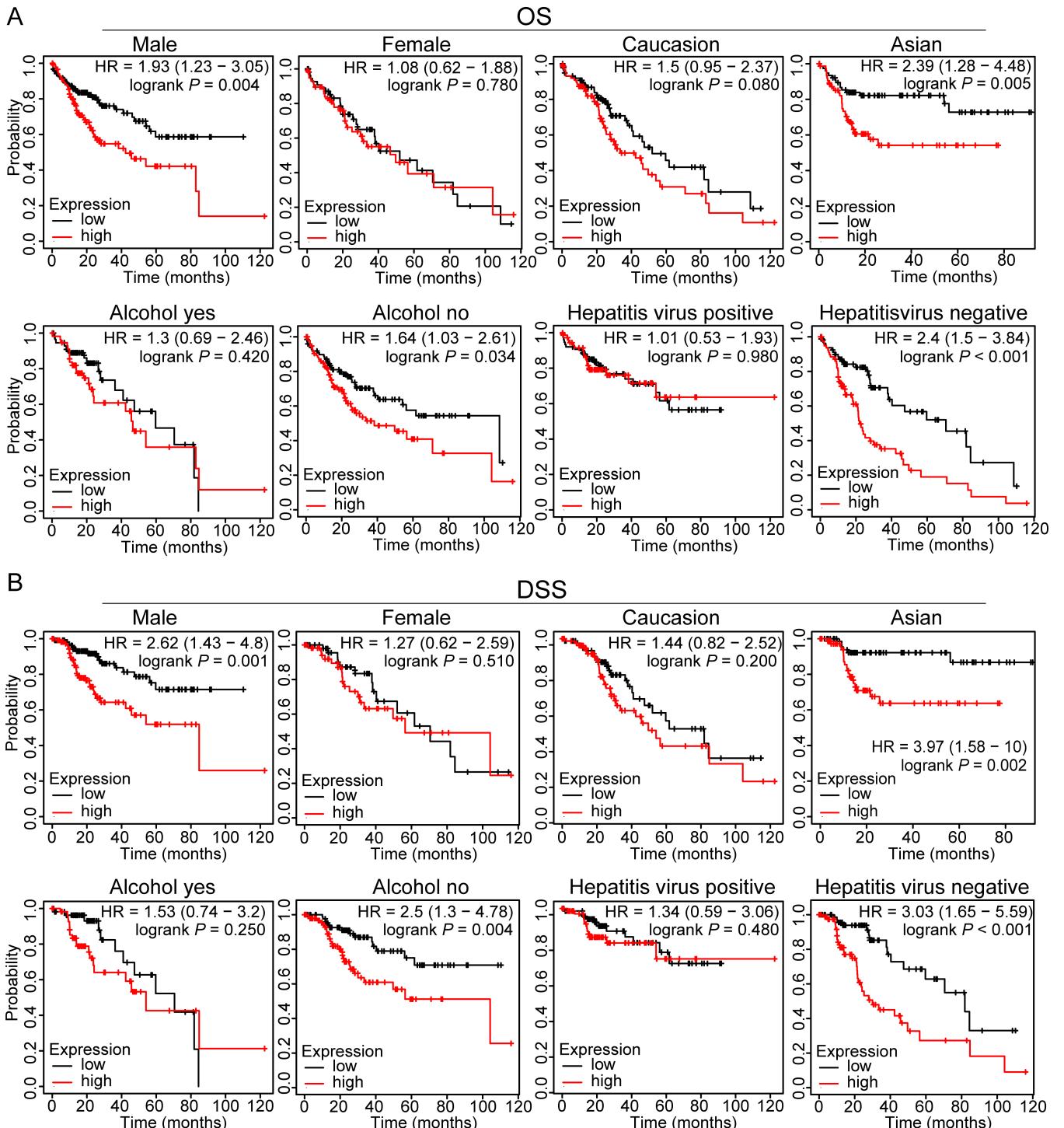
Figure S1. Up-regulated *G/NS2* in tumorous tissues and predicts poorer prognoses of HCC patients. A. Transcriptional levels of *G/NS2* in diverse solid tumor from TCGA database.

Figure S2. Subgroup survival plots of *G/NS2*-high and *G/NS2*-low expression HCC patients in the TCGA dataset. A. Overall survival (OS) analyses subgrouped by gender, race, alcohol consumption and hepatitis infection. B. Disease-specific survival (DSS) curves plotted by gender, race, alcohol consumption and hepatitis infection.

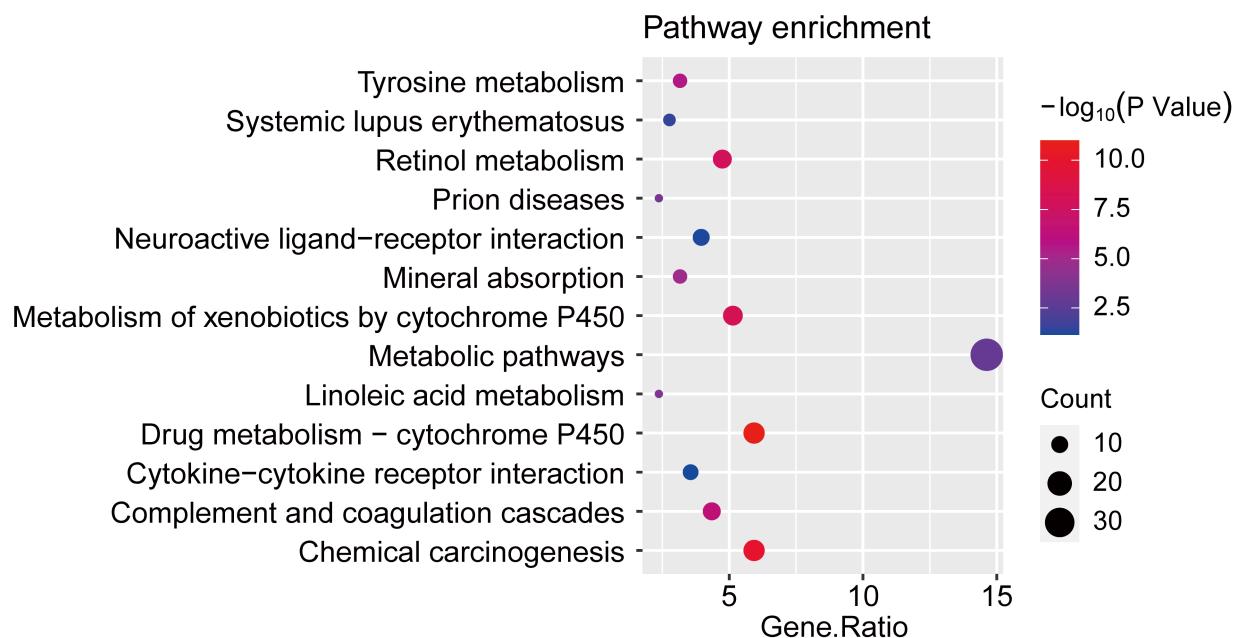
Figure S3. KEGG analysis of down-regulated differential expressed genes grouped by *G/NS2* expression. Pathway enrichment (A) and biological process (B) of 280 down-regulated genes by comparing *G/NS2*-high and *G/NS2*-low samples from the TCGA database.

Figure S4. Associations between *G/NS2* and DNA replication related genes in HCC. A. GSEA analysis hints *G/NS2* is positively associated with DNA replication. B. Correlation analyses of *G/NS2* expression and levels of DNA replication related genes.

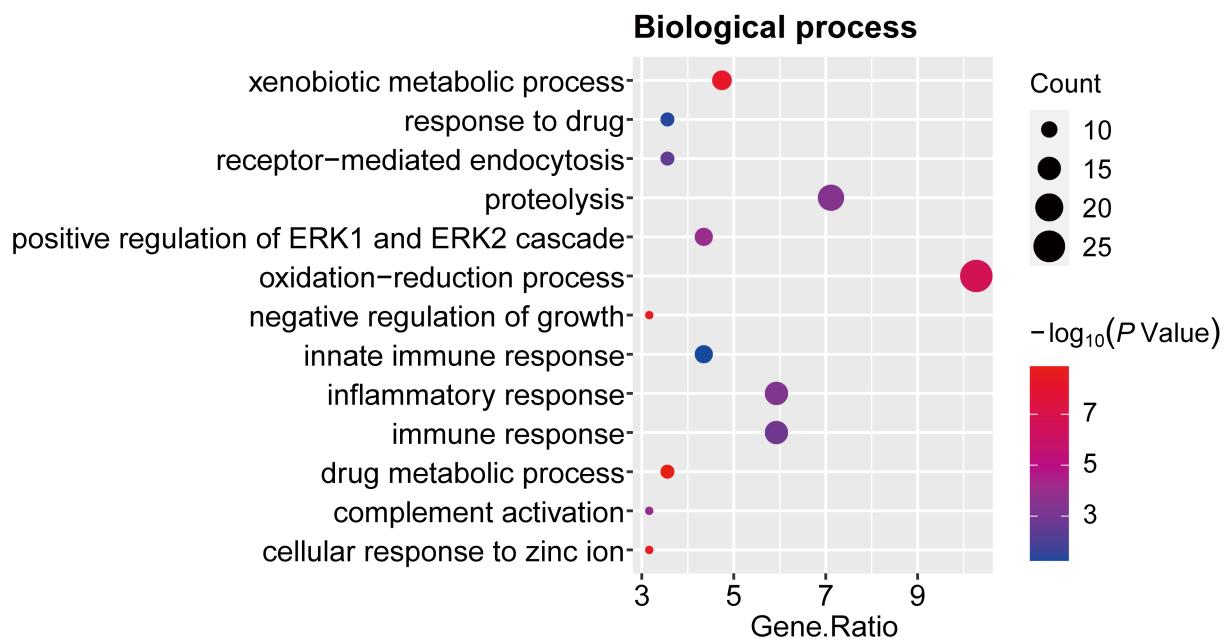
A



A



B



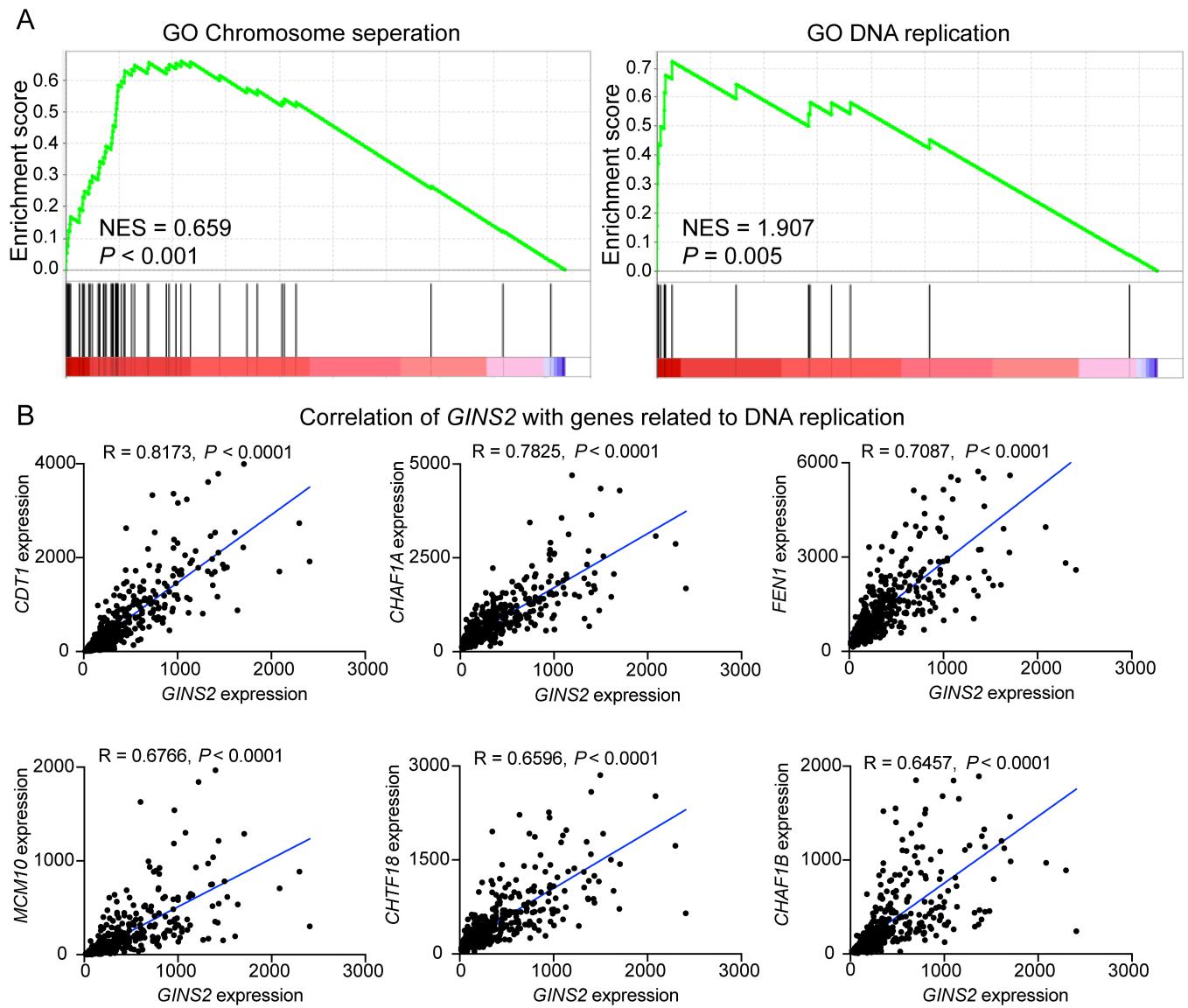


Table S1. Details of GEO series included in this study.

GEO series	Contributors	Nontumor	Tumor	Platform
GSE77314	Liu G, Hou G, Li L, Li Y et al.2016	50	50	Illumina Genome Analyzer (<i>Homo sapiens</i>)
GSE45436	Wang HW, Hsieh TH, Huang SY, et al.2013	39	95	Affymetrix Human Genome U133 Plus 2.0 Array
GSE36376	Lim HY, Sohn I, Deng S, Lee J et al.2013	193	249	Illumina HumanHT-12 V4.0 expression beadchip
GSE25097	Zhang C.et al.2011	243	268	Rosetta/Merck Human RSTA Affymetrix 1.0 microarray, Custom CD
GSE14520	Roessler S, Jia HL, Budhu A, Forgues M et al.2010	220	225	Affymetrix HT Human Genome U133A Array

Table S2. Clinicopathological characteristics in relation to GINS2 expression status in validation cohort.

characteristics	Case (N=236)	IHC score		χ^2	P value
		<6	≥ 6		
Age					
≥ 70 y		10(90.9)	1(9.1)	6.692	0.010*
<70y		104(46.2)	121(53.8)		
Gender					
male		99(48.1)	107(51.9)	0.040	0.842
female		15(50)	15(50)		
History of hepatitis					
Yes		86(50.9)	83(49.1)	1.590	0.207
no		28(41.8)	39(58.2)		
Status					
Live		84(53.2)	74(46.8)	4.521	0.033
dead		30(38.5)	48(61.5)		
Tumor Thrombus					
Yes		38(42.2)	52(57.8)	2.156	0.142
none		76(52.1)	70(47.9)		
Pathologic Stage					
I-II		79(48.5)	84(51.5)	0.005	0.941
III-IV		35(47.9)	38(52.1)		
T					
T1-T2		98(50.5)	96(49.5)	2.133	0.144
T3-T4		16(38.1)	26(61.9)		
N					
N0		114(49.4)	117(50.6)	3.002	0.061
N1		0(0)	5(100)		
M					
M0		113(48.3)	121(51.7)	<0.01	1.000
M1		1(50)	1(50)		
TMN Stage					
I-II		97(51.6)	91(48.4)	4.008	0.045*
III-IV		17(35.4)	31(64.6)		

Statistical significance was determined by Chi-square test or Fisher's exact test. * $P < 0.05$