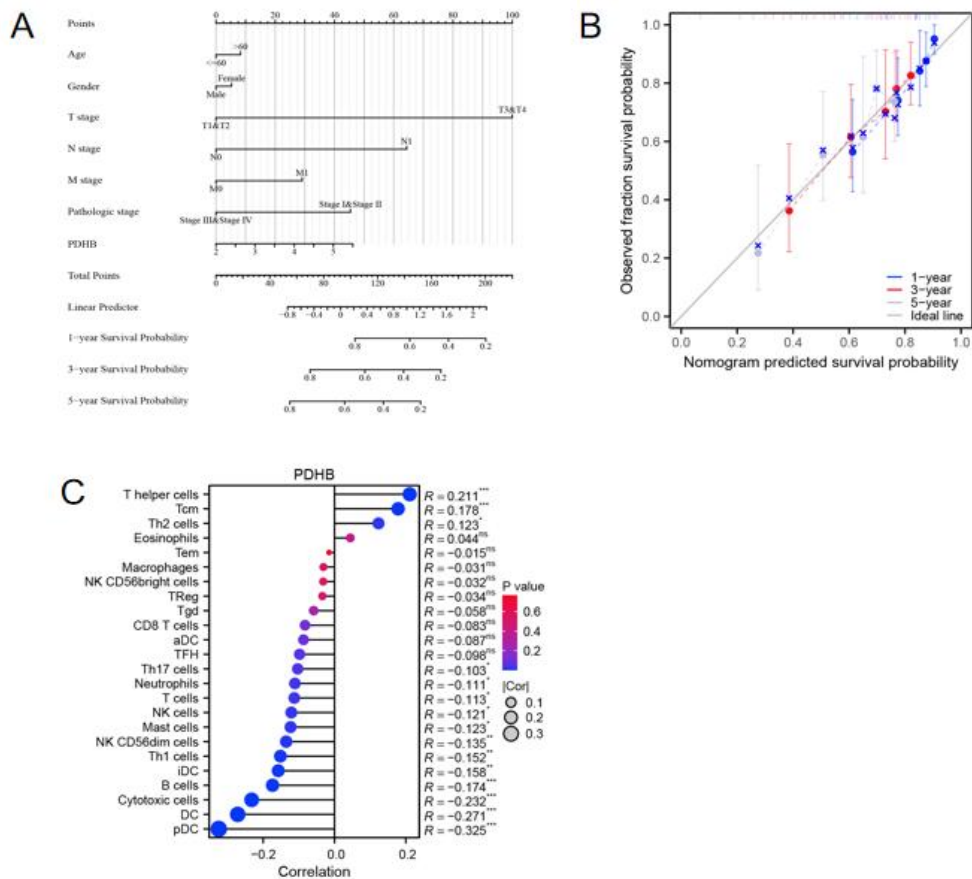


Supplementary Figure 1 Correlation analysis of pyruvate dehydrogenase E1 subunit β with molecular subtypes of tumours in a variety of cancers.



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Supplementary Figure 2 Columnar plots and calibration curves for predicting overall survival at 1, 3 and 5 years in patients with liver and gastric cancers. A: Overall survival-related line graph for patients with liver cancer; B: Calibration curves for predicting column line graphs in patients with liver cancer; C: Correlation of pyruvate dehydrogenase E1 subunit β expression with immune cells in liver cancer. PDHB: pyruvate dehydrogenase E1 subunit β .

Supplementary Table 1 Synthetic sequences of siRNAs of pyruvate dehydrogenase E1 subunit β

Gene name	Sense (5'-3')	Antisense (3'-5')
siRNA-1	GACAGUUCGUGAUGCUAUATT	UAUAGCAUCACGAACUGUCTT
siRNA-2	GCCAGUGUCAUGAAGACAATT	UUGUCUUCAUGACACUGGCTT
siRNA-3	CCAUUGACCAGGUUGUAAATT	UUUAUGACCUGGUCAAUGGTT
siRNA-4	GGAAGAAAUAUGGAGACAATT	UUGUCUCCAUAUUUCUUCCTT

Supplementary Table 2 Data for the top 100 genes associated with pyruvate dehydrogenase E1 subunit β

Gene Symbol	Gene ID	PCC
PSMD6	ENSG00000163636.10	0.59
RPP14	ENSG00000163684.11	0.59
ACTR8	ENSG00000113812.13	0.56
ELP6	ENSG00000163832.15	0.55
LARS2	ENSG00000011376.9	0.55
KCTD6	ENSG00000168301.12	0.53
RPP14	ENSG00000255154.7	0.53
USP19	ENSG00000172046.18	0.52
MLH1	ENSG00000076242.14	0.51
FCF1P2	ENSG00000228638.1	0.49
WDR48	ENSG00000114742.13	0.49
APEH	ENSG00000164062.12	0.49
TUSC2	ENSG00000114383.9	0.48
DHX30	ENSG00000132153.14	0.48
WDR82	ENSG00000164091.11	0.48
SPCS1	ENSG00000114902.13	0.48
KIAA1143	ENSG00000163807.5	0.48
CHCHD4	ENSG00000163528.12	0.48

METTL6	ENSG00000206562.11	0.47
OXSM	ENSG00000151093.7	0.47
ATP5A1	ENSG00000152234.15	0.47
GLT8D1	ENSG00000016864.16	0.47
FBXO36	ENSG00000153832.11	0.47
RP11-884K10.7	ENSG00000271976.1	0.47
ATPAF1	ENSG00000123472.12	0.47
NDUFAF1	ENSG00000137806.8	0.46
SKP1	ENSG00000113558.18	0.46
DYNC1LI1	ENSG00000144635.8	0.46
RAB5A	ENSG00000144566.10	0.46
EIF1B	ENSG00000114784.3	0.46
ZNF197	ENSG00000186448.14	0.46
SUCLA2	ENSG00000136143.13	0.46
NEK4	ENSG00000114904.12	0.46
C3orf18	ENSG00000088543.14	0.45
THUMPD3	ENSG00000134077.15	0.45
CRBN	ENSG00000113851.13	0.45
COQ5	ENSG00000110871.14	0.45
ARIH2	ENSG00000177479.19	0.45
FAM208A	ENSG00000163946.13	0.45
MATR3	ENSG00000015479.17	0.45
SEC22C	ENSG00000093183.13	0.45
MKRN2	ENSG00000075975.15	0.44
OCIAD1	ENSG00000109180.14	0.44
NICN1	ENSG00000145029.11	0.44
NKIRAS1	ENSG00000197885.10	0.44
SACM1L	ENSG00000211456.10	0.44
PTCD2	ENSG00000049883.14	0.44

SLC30A9	ENSG00000014824.13	0.44
HNRNP2	ENSG00000126945.8	0.44
PPP4R2	ENSG00000163605.14	0.44
ANO10	ENSG00000160746.12	0.44
UBA3	ENSG00000144744.16	0.44
MRFAP1	ENSG00000179010.14	0.44
IP6K1	ENSG00000176095.11	0.44
RAD17	ENSG00000152942.18	0.44
KBTBD4	ENSG00000123444.13	0.44
MRFAP1L1	ENSG00000178988.10	0.43
HIGD1A	ENSG00000181061.13	0.43
KIF1BP	ENSG00000198954.6	0.43
TCAIM	ENSG00000179152.18	0.43
METTL20	ENSG00000139160.13	0.43
EXD2	ENSG00000081177.18	0.43
PAIP2	ENSG00000120727.12	0.43
MOCS2	ENSG00000164172.18	0.43
PEX12	ENSG00000108733.9	0.43
DYNLL2	ENSG00000264364.2	0.42
UQCRC1	ENSG00000010256.10	0.42
BHLHB9	ENSG00000198908.11	0.42
N6AMT1	ENSG00000156239.11	0.42
ADAL	ENSG00000168803.14	0.42
FGD5-AS1	ENSG00000225733.5	0.42
MRS2	ENSG00000124532.14	0.42
NDUFS1	ENSG00000023228.13	0.42
CCDC71	ENSG00000177352.9	0.42
TATDN3	ENSG00000203705.10	0.42
ZNF555	ENSG00000186300.11	0.42

HADHB	ENSG00000138029.13	0.42
SLC25A26	ENSG00000144741.17	0.42
NME6	ENSG00000172113.8	0.41
NPRL2	ENSG00000114388.12	0.41
SUOX	ENSG00000139531.12	0.41
HDHD2	ENSG00000167220.11	0.41
BCDIN3D	ENSG00000186666.5	0.41
HACL1	ENSG00000131373.14	0.41
KIAA0232	ENSG00000170871.11	0.41
MICU2	ENSG00000165487.13	0.41
POMGNT2	ENSG00000144647.5	0.41
ISCA1	ENSG00000135070.13	0.41
AK6	ENSG00000085231.13	0.41
TMEM128	ENSG00000132406.11	0.41
CETN3	ENSG00000153140.8	0.41
YWHAE	ENSG00000108953.16	0.41
TTC19	ENSG00000011295.15	0.41
CIPC	ENSG00000198894.7	0.41
AZI2	ENSG00000163512.13	0.41
C17orf80	ENSG00000141219.15	0.41
CBR4	ENSG00000145439.11	0.41
TERF1	ENSG00000147601.13	0.41
NSL1	ENSG00000117697.14	0.4
PMPCB	ENSG00000105819.13	0.4

Supplementary Table 3 Analysis of overall results

Methods	Results	
	Upward	Downward
mRNA expression analysis (TIME2.0, TCGA and GTEX Database)	BRCA, LIHC, LUAD, UCEC, GBM, DLBC, THCA, LGG, OV, PAAD, PRAD, SKCM, TGCT, THYM, UCS	COAD, ESCA, HNSC, KIRC, KIRP, LUSC, READ, SARC, ACC, BLCA, STAD
Protein expression analysis (UALCAN database)	LIHC	BRCA, COAD, KIRC, HNSC, PAAD, GBM
qRT-PCR (compared to normal cells)	liver cancer, prostate cancer	gastric cancer, colon cancer, breast cancer
West blot(compared to normal cells)	liver cancer, gastric cancer (AGS, MGC-803)	gastric cancer (HGC-27)
	High	Low
DNA methylation level	ESCA, HNSC, KIRC, LUSC, PRAD	BLCA, KIRP, LIHC
	Positive correlation	Negative correlation
Survival analysis (Cox regression analysis)	BRCA, KIRC, KIRP, MESO, LGG, STAD	HNSC, PRAD
Survival analysis (Kaplan-Meier curves)	KIRP, MESO, LGG, BRCA, THCA	HNSC
Pathological correlation analysis	ESCA, KIRC, KIRP, LUAD, SKCM, TGCT, THCA	
	0.7 < AUC < 0.9	AUC > 0.9
ROC diagnostic analysis	OSCC, HNSC, ESCA, KIRC, TGCT, OV, LIHC	PAAD, DLBC, LUSC, LGG, GBM
	Positive correlation	Negative correlation
Correlation analysis with TMB	UCEC, STAD	THYM, LGG, KIRC, CESC, BRCA

Correlation analysis with MSI	UCEC, STAD, READ, KIRC	ACC, PRAD, OV, LUSC, LUAD, KICH, GBM, BRCA
Correlation with immune scores	LUSC	BLCA, BRCA, LGG, LUAD, PRAD, THCA, UCEC
Correlation with stroma scores	PAAD	BLCA, BRCA, LGG, LIHC, LUAD, MESO, OV, PRAD, SARC, TGCT, THCA, THYM, UCEC
Correlation with CD8 ⁺ T cell infiltration	BLCA, COAD, HNSC, KICH, LGG, LIHC, PRAD, PCPG, PAAD, THCA, THYM, UCEC	BRCA, LUAD
Correlation with CD4 ⁺ T cell infiltration	HNSC, TGCT	BRCA, GBM, KICH, KIRP, LGG, LUAD, SARC, THCA, UCEC,
Correlation with neutrophil infiltration	CHOL, HNSC, LIHC, PRAD, PAAD, TGCT, UVM	BRCA, LUAD, LUSC, OV, SARC, UCEC
Correlation with MDC cell infiltration	HNSC, KIRC, PRAD, PAAD, TGCT, THYM	BRCA, GBM, LUAD, MESO, OV, SARC, SKCM
Correlation with macrophage infiltration	BLCA, CHOL, ESCA, HNSC, KIRC, LIHC, PRAD, PCPG, PAAD, READ, THCA, THYM	SARC
Correlation with B-cell infiltration	ACC, DLBC, HNSC, KIRC, PRAD, PCPG, PAAD, TGCT,	BRCA, LUAD, UCEC

	THYM,	
Drug sensitivity correlation analysis	Chelerythrine, Nelarabine, Fludarabine, Fenretinide, Lapachone and Voranistat	Dasatinib, Dolastatin 10
Functional experiments		
CCK-8 (proliferation)	inhibition	
Plate cloning assay (proliferation)	inhibition	
Scratch test (migration)	inhibition	
Transwells (migration)	inhibition	
Transwells (invasion)	inhibition	

WB images

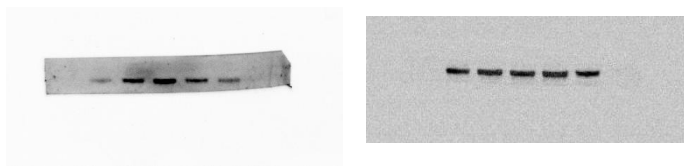


Fig.13F

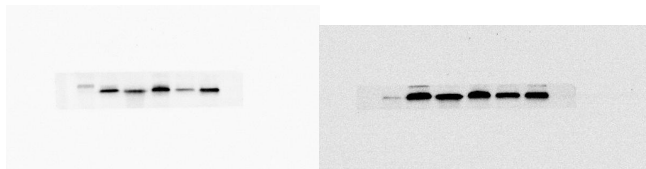


Fig.13H

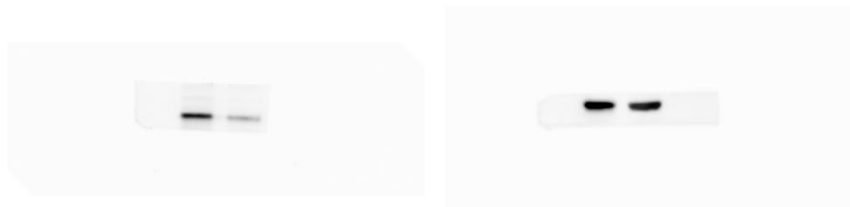


Fig.14A