Supplementary

Table S1 Dataset sources used in the study

Dataset sources	Assay	Location	Website
GEPIA2	Expression profiling	*Figure 1A*	http://gepia2.cancer-pku.cn
	Survival analysis	*Figure 8A,8B*	
TIMER2	Heatmap	*Figure 3C*; *Figure S1*; *Figure S3*	http://timer.cistrome.org
HPA	Fluorescence picture	*Figure 1B*; *Figure 2A-2G*; *Figure 4*	https://www.proteinatlas.org
cBioPortal	Genetic alterations	*Figure 5A*	https://www.cbioportal.org
	Survival analysis	*Figure 5B*	
UALCAN	Phosphorylation	*Figure 6A-6E*; *Figure S4*	http://ualcan.path.uab.edu
	Methylation	*Figure 7A-7C*	
	Protein expression	*Figure S2A*	
TCGA	Expression profiling; MSI/TMB, ROC; heatmap; enrichment	*Figure 3A,3B*; *Figure 9A-9G*; *Figure S2B*	https://www.xiantao.love; https://www.aclbi.com/static/index.html

HPA, Human Protein Atlas; UALCAN, The University of ALabama at Birmingham CANcer data analysis Portal; TCGA, The Cancer Genome Atlas; MSI, microsatellite instability; TMB, tumor mutation burden; ROC, receiver operating characteristic.

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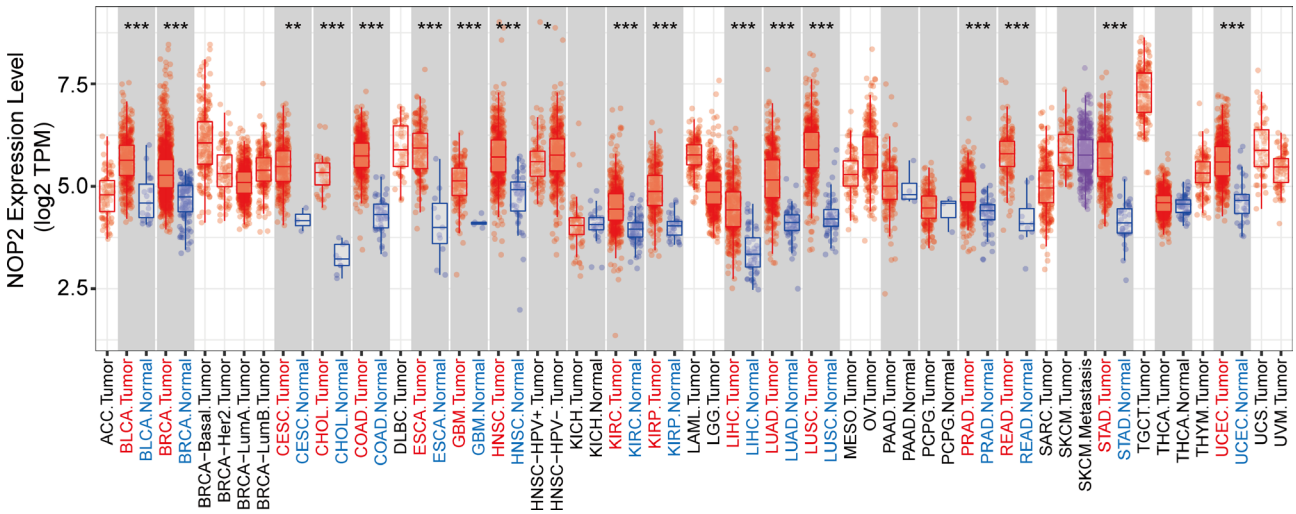

Figure S1 Expression levels of NSUN1 in tumour and normal tissues (TIMER2 database). *, P<0.05; **, P<0.01; ***, P<0.001. TPM, transcripts per million; ACC, adrenocortical carcinoma; BLCA, bladder urothelial carcinoma; BRCA, breast invasive carcinoma; CESC, cervical squamous cell carcinoma and endocervical adenocarcinoma; CHOL, cholangiocarcinoma; COAD, colon adenocarcinoma; DLBC, lymphoid neoplasm diffuse large B-cell lymphoma; ESCA, esophageal carcinoma; GBM, glioblastoma multiforme; HNSC, head and neck squamous cell carcinoma; KICH, kidney chromophobe; KIRC, kidney renal clear cell carcinoma; KIRP, kidney renal papillary cell carcinoma; LAML, acute myeloid leukemia; LGG, brain lower grade glioma; LIHC, liver hepatocellular carcinoma; LUAD, lung adenocarcinoma; LUSC, lung squamous cell carcinoma; MESO, mesothelioma; OV, ovarian serous cystadenocarcinoma; PAAD, pancreatic adenocarcinoma; PCPG, pheochromocytoma and paraganglioma; PRAD, prostate adenocarcinoma; READ, rectum adenocarcinoma; SARC, sarcoma; SKCM, skin cutaneous melanoma; STAD, stomach adenocarcinoma; TGCT, testicular germ cell tumours; THCA, thyroid carcinoma; THYM, thymoma; UCEC, uterine corpus endometrial carcinoma; UCS, uterine carcinosarcoma; UVM, uveal melanoma; TIMER2, tumour immune estimation resource 2.

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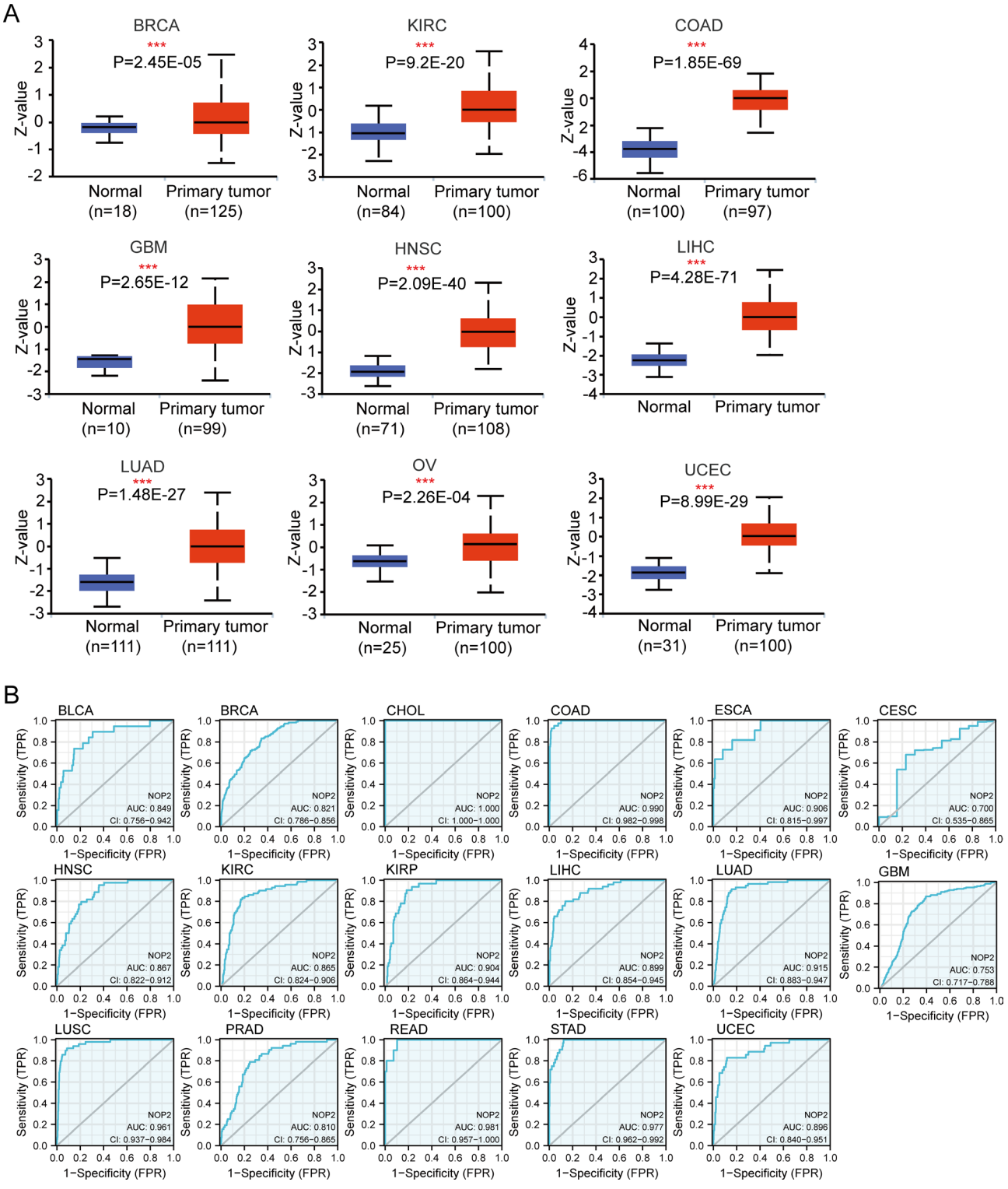

Figure S2 (A) Protein levels of NSUN1 in tumour and normal tissues (UALCAN database). (B) ROC curves were used to evaluate the sensitivity and specificity of NSUN1 expression in predicting cancer tissues from normal tissues (Xiantao tool). ***, P<0.001. BRCA, breast invasive carcinoma; KIRC, kidney renal clear cell carcinoma; COAD, colon adenocarcinoma; GBM, glioblastoma multiforme; HNSC, head and neck squamous cell carcinoma; LIHC, liver hepatocellular carcinoma; LUAD, lung adenocarcinoma; OV, ovarian serous cystadenocarcinoma; UCEC, uterine corpus endometrial carcinoma; AUC, area under the curve; CI, confidence interval; FPR, false positive rate; TPR, true positive rate; BLCA, bladder urothelial carcinoma; CHOL, cholangiocarcinoma; ESCA, esophageal carcinoma; CESC, cervical squamous cell carcinoma and endocervical adenocarcinoma; KIRP, kidney renal papillary cell carcinoma; LUSC, lung squamous cell carcinoma; PRAD, prostate adenocarcinoma; READ, rectum adenocarcinoma; STAD, stomach adenocarcinoma; UALCAN, The University of ALabama at Birmingham CANcer data analysis Portal; ROC, receiver operating characteristic.

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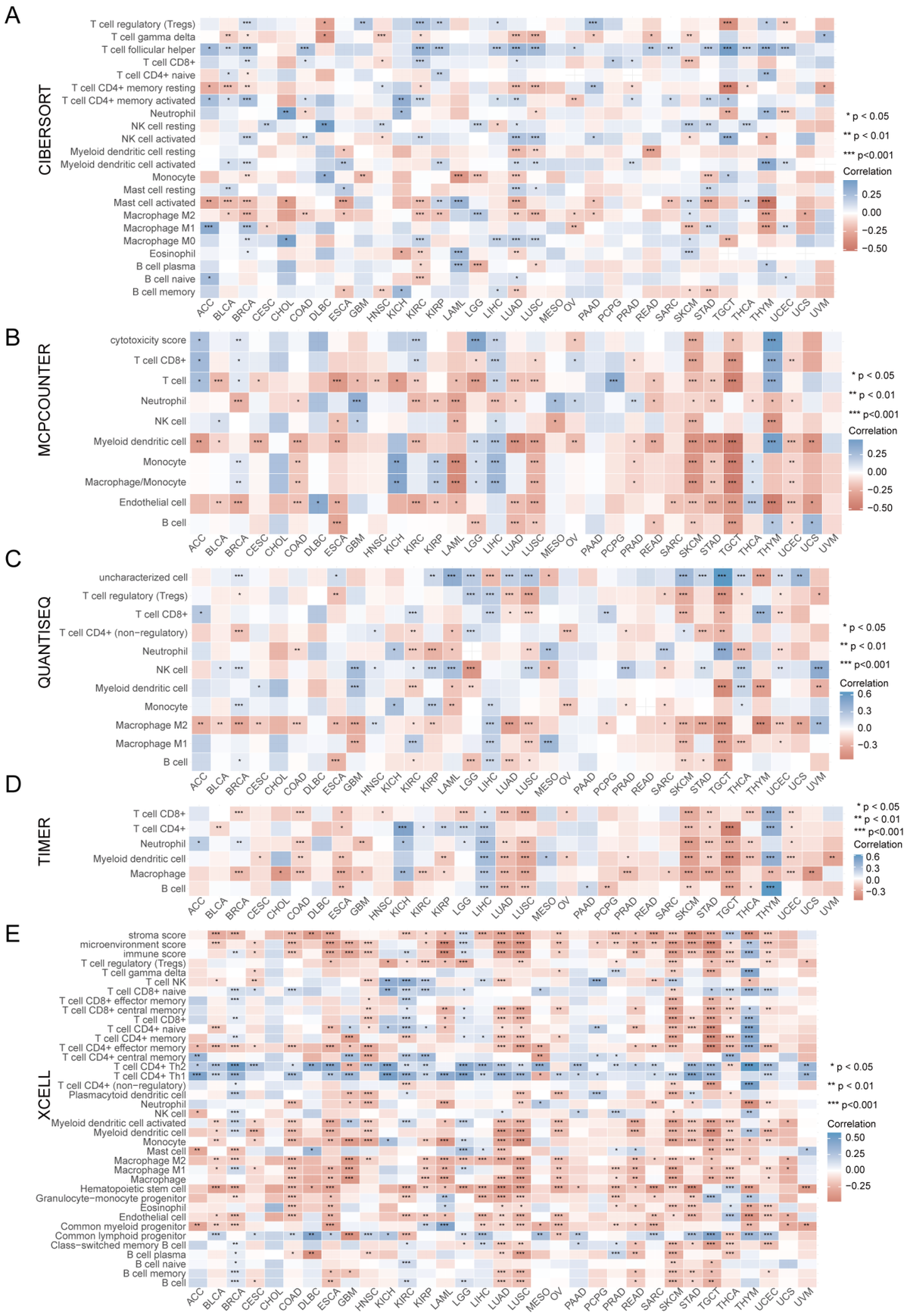

Figure S3 The relationship between NSUN1 gene expression in cancers and infiltrated immune cells in different databases. (A) CIBERSORT. (B) MCPCOUNTER. (C) QUANTISEQ. (D) TIMER. (E) XCELL (TIMER2 database). *, P<0.05; **, P<0.01; ***, P<0.001. ACC, adrenocortical carcinoma; BLCA, bladder urothelial carcinoma; BRCA, breast invasive carcinoma; CESC, cervical squamous cell carcinoma and endocervical adenocarcinoma; CHOL, cholangiocarcinoma; COAD, colon adenocarcinoma; DLBC, lymphoid neoplasm diffuse large B-cell lymphoma; ESCA, esophageal carcinoma; GBM, glioblastoma multiforme; HNSC, head and neck squamous cell carcinoma; KICH, kidney chromophobe; KIRC, kidney renal clear cell carcinoma; KIRP, kidney renal papillary cell carcinoma; LAML, acute myeloid leukemia; LGG, brain lower grade glioma; LIHC, liver hepatocellular carcinoma; LUAD, lung adenocarcinoma; LUSC, lung squamous cell carcinoma; MESO, mesothelioma; OV, ovarian serous cystadenocarcinoma; PAAD, pancreatic adenocarcinoma; PCPG, pheochromocytoma and paraganglioma; PRAD, prostate adenocarcinoma; READ, rectum adenocarcinoma; SARC, sarcoma; SKCM, skin cutaneous melanoma; STAD, stomach adenocarcinoma; TGCT, testicular germ cell tumours; THCA, thyroid carcinoma; THYM, thymoma; UCEC, uterine corpus endometrial carcinoma; UCS, uterine carcinosarcoma; UVM, uveal melanoma; TIMER2, tumour immune estimation resource 2.

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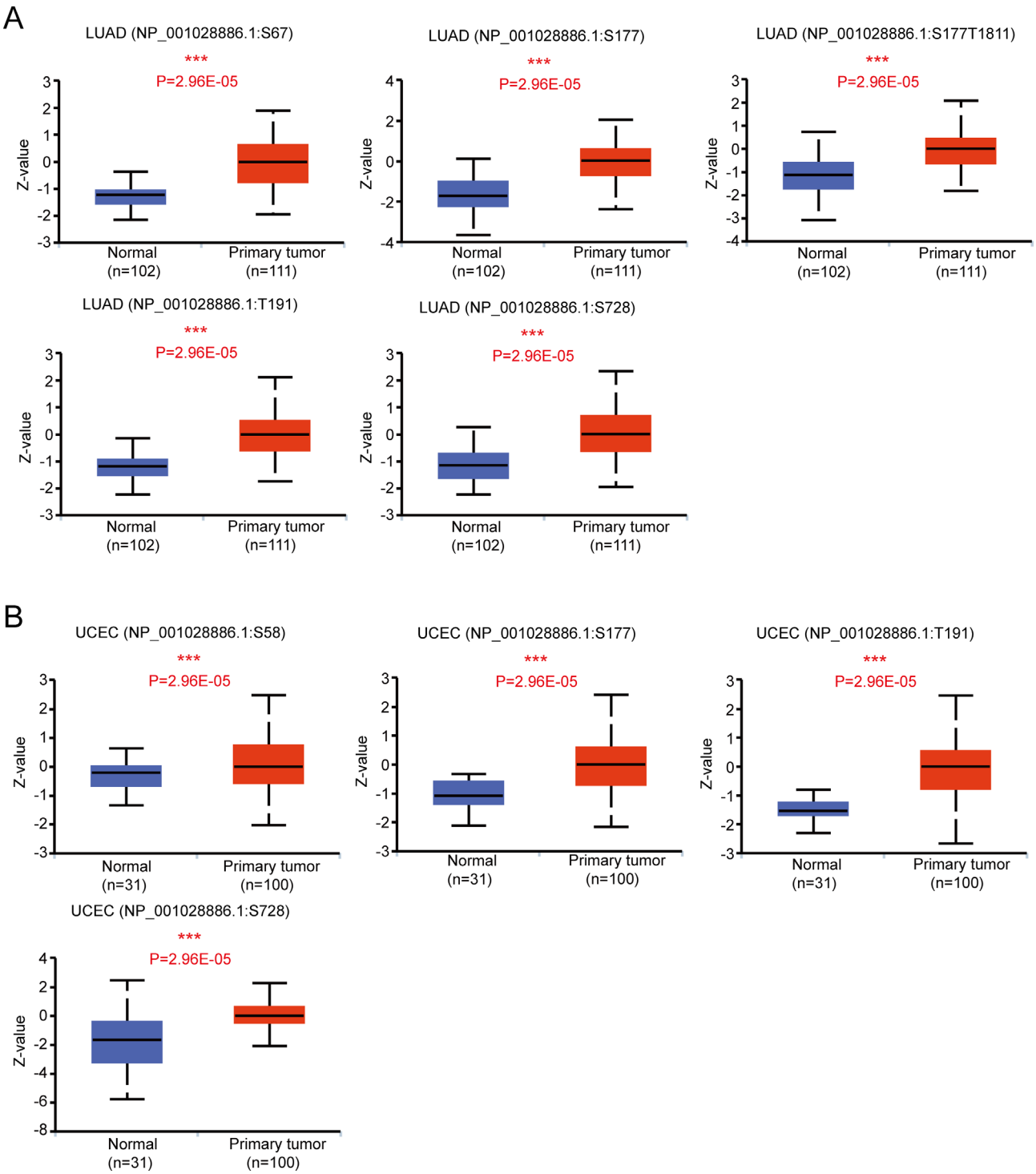

Figure S4 Protein phosphorylation of NSUN1 in different tumours. (A) LUAD. (B) UCEC (UALCAN database). ***, P<0.001. LUAD, lung adenocarcinoma; UCEC, uterine corpus endometrial carcinoma; UALCAN, The University of ALabama at Birmingham CANcer data analysis Portal.

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