Figure S1. Study flowchart. GC, gastric cancer; FDR, false discovery rate; FC, fold-change; lncRNA, long non-coding RNA; miRNA, microRNA; TCGA, The Cancer Genome Atlas; GO, Gene Ontology; PPI, protein-protein interaction; ROC, receiver operating characteristic; GSEA, gene set enrichment analysis; RT-qPCR, reverse transcription-quantitative PCR.

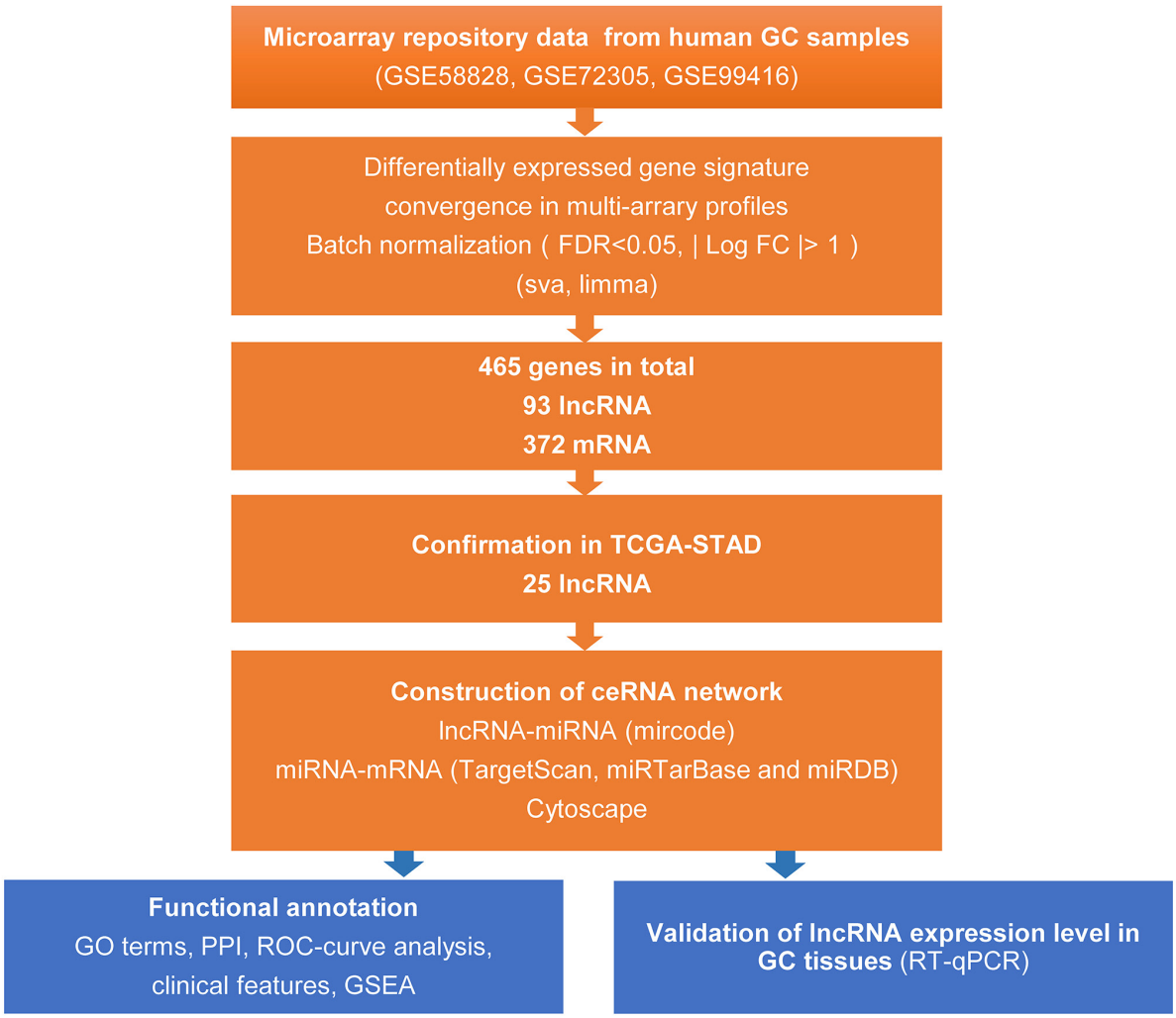


Table SI. Differentially regulated lncRNAs in the three Gene Expression Omnibus datasets.

lncRNA	logFC	P-value
PCAT18	-4.661	<0.001
AC126365	2.831	<0.001
AC008268	-4.831	<0.001
AC124067	3.864	<0.001
AL365203	2.586	<0.001
DUXAP8	3.182	<0.001
LINC00668	2.977	0.001
CASC19	3.258	0.001
FEZF1-AS1	2.381	0.001
SH3PXD2A-AS1	3.500	0.002
DLGAP1-AS2	2.347	0.002
AC116666	-2.574	0.002
AC073592	-2.759	0.003
AL049838	-2.990	0.003
AC105277	-2.474	0.003
LINC00982	-2.728	0.003
LINC02582	2.849	0.004
AC093523	-3.222	0.004
LINC00365	-3.164	0.004
AC026803	-2.599	0.007
AC010457	2.398	0.008
LINC02404	1.770	0.008
AC005062	-3.017	0.008
UNC5B-AS1	-2.282	0.008
LHX5-AS1	-2.140	0.008
AC016394	1.971	0.009
ELF3-AS1	1.841	0.010
LINC01589	1.724	0.011
AC105460	2.443	0.011
AL135924	2.128	0.011
NFIA-AS1	-2.881	0.011
LINC01133	-2.171	0.011
AC027237	1.929	0.012
NCOA7-AS1	-2.208	0.012
TRG-AS1	-2.561	0.013
LINC00165	2.426	0.015
AP003351	1.567	0.015
LINC00370	-2.707	0.015
AL138930	-1.939	0.015
AC013264	-1.476	0.015
LINC02447	-2.284	0.017
DPP10-AS1	-2.678	0.017
PICSAR	2.395	0.019
LINC02163	2.221	0.019
AL158206	-2.592	0.019
LINC01352	-2.170	0.019
LINC00853	1.699	0.019
AC093732	1.542	0.021
SNHG3	1.589	0.022
AL049555	1.856	0.022
AP001266	1.001	0.023
LINC01564	1.403	0.023
AC009102	-3.239	0.023
LINC00582	-1.398	0.023
AC012676	1.688	0.023
AC120036	-2.154	0.027
ARLNC1	2.288	0.027
LINC00501	1.283	0.027
AL157834	-2.602	0.027
AL365361	-2.217	0.027
AL136099	-1.818	0.028
LINC00707	2.275	0.030
LINC02595	1.244	0.030
AC009549	-2.452	0.030
LINC01559	-1.147	0.030
AC006452	-1.362	0.030
LINC01291	2.015	0.034
LINC02577	1.205	0.034
LINC00487	-2.274	0.034
AL161781	-1.325	0.034
FAM83C-AS1	1.914	0.037
AL035446	2.011	0.038
DLEU7-AS1	1.484	0.038
AC004009	1.107	0.038
COLCA1	-2.228	0.038
LINC01985	-1.720	0.038
AC093752	1.354	0.040
LRRC75A-AS1	1.434	0.041
CR381653	1.554	0.042
LNX1-AS1	-2.204	0.042
AL590627	-1.364	0.042
LINC01657	-1.635	0.045
AL162582	1.939	0.045
AC112187	1.353	0.045
AL691482	1.040	0.045
AC011445	-2.165	0.045
SOX21-AS1	-1.884	0.045
PGM5-AS1	-1.593	0.045
HRAT92	1.409	0.047
AC140912	1.858	0.049
GK-IT1	1.035	0.049
PTCSC2	-2.107	0.049
TTC39A-AS1	-1.457	0.049

Table SI. Continued.

lncRNA, long non-coding RNA; FC, fold-change.

Table SII. Differentially regulated mRNAs in the three Gene Expression Omnibus datasets.

lncRNA	logFC	P-value
KCNE2	-7.736	<0.001
GIF	-9.474	<0.001
GKN1	-8.008	<0.001
CLDN3	6.116	<0.001
CDX1	4.296	<0.001
SST	-6.674	<0.001
CT83	5.725	<0.001
LIPF	-6.514	<0.001
AKR1B10	-5.285	<0.001
CPA2	-5.978	<0.001
CA2	-5.802	<0.001
ANXA10	-5.723	<0.001
CDA	3.365	<0.001
FGG	-4.357	<0.001
JCHAIN	-3.813	<0.001
PSAPL1	-4.224	<0.001
DRD5	-5.798	<0.001
CLPS	-4.545	<0.001
CLDN4	4.048	<0.001
GDA	3.680	<0.001
INSM1	-4.554	<0.001
ADAM28	-3.651	<0.001
GRIN2D	3.404	<0.001
TRIM50	-5.503	<0.001
PGA5	-5.414	<0.001
SKA3	2.740	<0.001
CYP2C8	-3.898	<0.001
UGT2B15	-3.796	<0.001
ATP4B	-5.081	<0.001
TMED6	-4.057	<0.001
C11orf86	1.288	<0.001
UGT2B17	-3.874	<0.001
FADS1	2.608	<0.001
ADH1B	-3.914	<0.001
PRSS21	3.351	<0.001
CLDN1	3.308	<0.001
PLAC8L1	2.076	<0.001
PIK3C2G	-3.316	0.001
PON2	2.350	0.001
CKS2	2.355	0.001
C16orf89	-2.944	0.001
GC	-3.343	0.001
CXCL17	-3.633	0.001
RNASE1	-3.482	0.001
VSIG2	-3.264	0.001
CTSE	-4.200	0.001
PABPC1L2B	-3.584	0.001
PBK	2.756	0.001
MARVELD3	1.555	0.001
LTF	-3.588	0.001
UBE2C	2.331	0.001
GUCA1C	-3.430	0.001
PRSS1	-2.341	0.001
GSTA5	-3.076	0.001
MAGEA6	3.711	0.001
ZFY	2.162	0.001
FGFBP1	3.622	0.001
FOXC1	2.702	0.001

Table SII. Continued.

lncRNA	logFC	P-value
TRIM73	-3.147	0.001
CAPN9	-4.396	0.001
FBXL13	-2.504	0.001
CYTIP	-3.044	0.001
SERPINA5	-2.899	0.001
REP15	-4.462	0.001
HOXB9	2.304	0.001
CHAD	-2.996	0.002
NRG4	-1.469	0.002
CDX2	3.081	0.002
MAGEB2	3.525	0.002
SFRP4	2.292	0.002
MSTO1	-3.608	0.002
PGA4	-3.400	0.002
AVPR1B	-2.610	0.002
CLIC6	-2.824	0.002
MED12	-4.079	0.002
NXPH4	2.420	0.002
LPGAT1	2.427	0.003
AL583836	-2.371	0.003
ALDOB	-3.567	0.003
GAST	-2.949	0.003
ALPG	2.923	0.003
PI3	3.696	0.003
CD53	-2.502	0.003
CHST6	2.568	0.003
ADH1C	-3.403	0.003
TRNP1	-2.773	0.003
FSCN1	2.275	0.004
TLN2	-2.510	0.004
B4GALNT1	-2.068	0.004
CARNS1	-2.547	0.004
CCDC160	-2.772	0.004
HIST1H3G	2.594	0.004
COX6B2	2.250	0.004
AC012476	2.428	0.004
CDC6	2.622	0.004
PRAME	3.777	0.004
REG4	2.321	0.004
BAMBI	2.465	0.004
ZNF880	-2.329	0.005
BEX1	-2.933	0.005
FGA	-2.514	0.005
ITIH5	-2.523	0.005
TMEM171	-2.854	0.005
NUSAP1	2.104	0.005
CCNB1	2.078	0.005
NR0B2	-3.469	0.005
GAGE12E	3.155	0.005
TM4SF20	2.828	0.005
SULT2A1	-2.766	0.005
KIF20A	2.421	0.005
CAMK2N1	2.076	0.006
TRPA1	-2.897	0.006
GSTA2	-2.586	0.006
ADH1A	-3.413	0.006
HPGD	-2.797	0.006
PARVG	-1.794	0.006
KIF2C	2.399	0.006

Table SII. Continued.

lncRNA	logFC	P-value
DUSP9	2.971	0.006
CTHRC1	2.449	0.006
FABP1	2.208	0.006
VILL	-2.559	0.007
ADRB2	-1.762	0.007
ZP1	-2.496	0.007
OR2B6	2.035	0.007
NKX6-2	-3.599	0.008
RPRM	-3.231	0.008
GAGE1	2.923	0.008
AGTR1	-1.426	0.008
AUNIP	2.162	0.008
IL33	-2.131	0.008
AADAC	-2.044	0.008
TWIST1	2.471	0.009
CLRN3	1.180	0.009
CCL19	-2.682	0.009
PDE3A	2.533	0.009
OSMR	1.900	0.010
HOXC13	2.873	0.010
MUC13	2.966	0.010
SOX11	2.297	0.010
GJA5	-2.078	0.010
IL1B	-1.550	0.010
FAM83D	1.904	0.010
CCL15	3.052	0.011
REG1A	-3.323	0.011
SHISAL2B	-2.682	0.011
GKN2	-2.769	0.011
HTR1D	2.304	0.011
LRRN1	-2.389	0.011
PDIA2	-3.698	0.012
C4BPB	1.984	0.012
FOXL2	2.761	0.012
WISP1	1.976	0.012
SERPINB5	1.947	0.012
MSMB	-3.245	0.012
CKB	-2.492	0.012
LIN9	1.821	0.012
PGC	-2.965	0.012
CYB5B	1.893	0.012
PRC1	1.972	0.012
CHGB	-3.052	0.012
FANCI	1.868	0.013
NEUROD2	2.658	0.013
FOXS1	1.350	0.013
CFC1	-2.601	0.013
GHRL	-2.183	0.013
CXCL13	-1.738	0.014
COX7B2	2.622	0.014
PLA2G2A	1.819	0.014
TUBB3	2.415	0.014
GK	1.732	0.014
P2RX6	-2.034	0.015
SMIM1	-1.903	0.015
ADA	-1.880	0.015
DMRTA2	2.596	0.015
KRT6B	2.778	0.015
MT1G	-3.118	0.015

Table SII. Continued.

lncRNA	logFC	P-value
SOX21	-2.537	0.015
RABGEF1	1.790	0.015
CEACAM6	2.069	0.015
PCLAF	1.896	0.016
ZIC5	2.562	0.016
CLDN7	2.143	0.016
PCDHB10	1.232	0.016
GUCA2B	-3.059	0.016
KLHL29	-2.598	0.016
CKAP2L	1.842	0.016
AURKB	1.745	0.017
CGA	2.712	0.017
CELA3B	-3.054	0.017
SYT16	-2.438	0.017
MLANA	-1.701	0.017
CREBRF	2.387	0.017
PMAIP1	2.012	0.017
SLC2A12	-1.831	0.017
ITM2A	-2.103	0.018
KCTD8	-2.400	0.018
TNFRSF17	-2.734	0.018
FZD10	2.333	0.018
KRTAP19-2	-2.186	0.018
IFNE	1.908	0.018
TIFAB	-1.766	0.019
LY6K	2.308	0.019
XKR9	1.644	0.019
TUBB8	1.637	0.019
CD3D	-2.495	0.019
UBE2T	1.727	0.020
ALDH1A1	-2.272	0.020
PAPSS2	1.679	0.020
DLX4	2.266	0.020
KRTAP10-10	1.156	0.020
TRIM15	1.616	0.020
KCNJ15	-2.197	0.020
LGALSL	1.631	0.021
NCCRP1	2.255	0.021
APOC2	1.324	0.021
MUC17	1.571	0.021
PTF1A	-2.888	0.021
CPQ	-1.925	0.022
SOSTDC1	-2.289	0.022
KIF20B	1.995	0.022
IER5L	1.916	0.022
S100A14	1.554	0.022
CNTD1	-2.818	0.022
GNG7	-2.013	0.023
OMD	-1.558	0.024
PCSK9	2.235	0.024
TGM2	2.085	0.024
APBB1	-1.675	0.024
MOSPD3	-1.653	0.024
CD1C	-1.815	0.024
NME1-NME2	1.640	0.024
OSR2	1.043	0.025
FABP2	1.534	0.025
UBE2J1	-1.014	0.025
TCEAL3	-1.698	0.025

Table SII. Continued.

lncRNA	logFC	P-value
SULT1C2	-2.541	0.026
ULBP2	2.190	0.026
TFF2	-1.708	0.026
STIL	1.753	0.026
TCEAL2	-2.205	0.026
ONECUT2	2.165	0.027
AGR3	1.493	0.027
MZB1	-2.037	0.027
PRKCB	-2.020	0.027
MKRN3	2.094	0.028
MMP1	1.489	0.028
COL17A1	-1.640	0.028
LTB	-1.498	0.028
CAPN13	-2.294	0.028
SOWAHA	-1.644	0.028
PRAP1	2.163	0.028
RBP5	-1.773	0.028
RND3	2.154	0.029
RHOV	2.079	0.029
AC011473	2.061	0.029
TCN1	-2.166	0.029
SYTL1	-1.859	0.029
UBE2S	1.573	0.029
FARP2	-1.718	0.030
FOXE1	2.069	0.030
GPRC5B	-2.038	0.030
CFAP73	-2.431	0.031
MT4	2.041	0.031
GLA	1.752	0.031
CA4	-1.608	0.031
AKR7A3	-2.344	0.032
CAPN8	-1.286	0.032
ZIC2	2.008	0.032
GPRC5A	1.825	0.032
KIF26B	1.580	0.032
FERMT1	1.659	0.032
NUP155	-1.849	0.033
KLRB1	-1.751	0.033
PLCB2	-2.480	0.033
ANO7	-2.391	0.033
GZMK	-2.199	0.033
ORC1	2.006	0.033
TREM2	1.523	0.033
LRRC17	-1.946	0.034
SERPINB1	1.355	0.034
ICAM5	-2.439	0.034
NOG	-1.458	0.034
FCGBP	-2.414	0.034
KIF23	1.719	0.035
SCAMP4	-1.822	0.035
MT1H	-2.423	0.035
TBCC	-1.053	0.035
NALCN	-1.574	0.035
ATP1B3	1.968	0.035
MMP3	1.343	0.035
PTTG2	1.910	0.035
SCGB2A1	-2.392	0.036
NMUR2	-1.567	0.036
ADHFE1	-1.438	0.036

Table SII. Continued.

lncRNA	logFC	P-value
IL20RB	1.948	0.036
POF1B	1.334	0.036
MAL	-2.103	0.036
NAA50	1.526	0.037
GPSM2	1.696	0.037
MYOC	-2.388	0.037
POSTN	-2.038	0.037
HRK	1.940	0.037
CEACAM5	2.257	0.037
DEPDC1B	1.863	0.038
SELENOI	1.572	0.038
SCO2	-1.562	0.038
SWSAP1	-1.923	0.038
LCN15	1.490	0.038
CALCA	-2.370	0.038
SMIM6	-2.409	0.038
KRT17	1.928	0.038
APOC1	1.327	0.038
SLC39A5	1.255	0.038
SPDL1	1.650	0.039
BUB1B	1.917	0.039
KRT7	1.709	0.040
ALDH1A2	-2.358	0.040
FA2H	-2.054	0.040
TMEM100	-1.373	0.040
CLINT1	1.497	0.040
MYH11	-1.508	0.040
SOWAHD	-1.980	0.040
CDKN2A	1.913	0.041
RAB27B	-1.511	0.041
TRAM1L1	-1.372	0.041
RDH5	1.562	0.041
TRIP13	1.637	0.042
KYNU	1.910	0.042
VSNL1	1.823	0.042
DCAF12L1	-2.323	0.042
DGKH	1.623	0.042
CLEC10A	-1.502	0.042
GLB1L3	-2.219	0.042
ANKRD22	-1.812	0.043
SYNPO2	-1.580	0.043
GAL	1.905	0.043
S100A16	1.674	0.043
HRH2	-2.307	0.043
CR2	-1.353	0.043
MAGEH1	-2.060	0.043
FLVCR1	1.972	0.043
ATP4A	-1.831	0.044
ACADL	-2.170	0.044
DNMT3L	1.894	0.044
CCL26	1.605	0.044
DSC2	1.192	0.044
CKS1B	1.761	0.044
ACAD8	-1.565	0.045
PTGES	1.886	0.045
GCNT3	1.600	0.045
DPT	-2.253	0.045
SMPD3	-1.999	0.045
IGFBP5	-1.511	0.046

Table SII. Continued.

lncRNA	logFC	P-value
ADAMTS3	-2.295	0.046
CD70	1.873	0.046
HOXA10	1.815	0.046
PTTG1	1.673	0.047
SCGN	-1.966	0.047
SYNDIG1	-2.284	0.047
CALHM4	-2.224	0.047
RSPO3	-1.316	0.047
NETO2	1.860	0.047
OCLN	1.148	0.047
RPS6KB1	1.481	0.047
MAGEE1	-1.957	0.047
CDK3	-2.276	0.048
IGFL1	1.857	0.048
CSTB	1.534	0.048
KRT222	-1.626	0.048
ODAM	-2.272	0.049
ESRRB	-1.294	0.049
GRIA4	-2.667	0.050

FC, fold-change.

Table SIII. Associations between other lncRNAs expression and clinicopathological characteristics.

lncRNA	Percentage (%)	P-value
DLEU7-AS1	age >60 254 (67.7)	0.6475
LINC00501	≤60 121 (32.3)	0.7075
SOX21-AS1		0.1426
LINC00365		0.1158
GK-IT1		0.1057
DLEU7-AS1	sex Male: 241 (64.3)	0.2711
SOX21-AS1	Female: 134 (33.7)	0.7652
LINC00365		0.3762
GK-IT1		0.4066
DLEU7-AS1	grade G12: 147 (39.2)	0.6100
SOX21-AS1	G34: 219 (58.4) NA: 9 (2.4)	0.6858
LINC00365		0.3052
GK-IT1		0.2309
DLEU7-AS1	stage satge12: 164 (43.7)	0.8703
LINC00501	stage34: 188 (50.1) NA: 23 (6.1)	0.6796
SOX21-AS1		0.3831
LINC00365		0.1320
GK-IT1		0.8523
DLEU7-AS1	T T12: 99(26.4)	0.1956
LINC00501	T34: 269 (71.7) NA: 7 (1.9)	0.6499
SOX21-AS1		0.4031
LINC00365		0.5337
GK-IT1		0.9883
DLEU7-AS1	N N0: 111(29.6)	0.6445
LINC00501	N1: 246 (65.6) NA: 18 (4.8)	0.6266
SOX21-AS1		0.1411
GK-IT1		0.6472
DLEU7-AS1	M M0: 330 (88.0)	0.0933
LINC00501	M1: 25 (6.7) NA: 20 (5.3)	0.7883
SOX21-AS1		0.4266
LINC00365		0.2583
GK-IT1		0.0518

lncRNA, long non-coding RNA; T, tumor; N, lymph node; M, metastasis.