

SUPPLEMENTARY TABLES

Supplementary Table 1. The top 10 upregulated and downregulated DELs in different expression profiles.

Profile	lncRNA	style	Fold Change	P-value	FDR
GSE29721	NONHSAT207339.1	up	13.563082	0.000629	0.158919
	NR_027687.1	up	10.552491	0.000232	0.097955
	NONHSAT142613.2	up	7.639081	0.00386	0.314951
	ENST00000389897.3	up	7.171353	0.000096	0.060247
	NONHSAT035498.2	up	6.544641	0.012906	0.433058
	LINC00348	up	6.469905	0.006573	0.385467
	NONHSAT165875.1	up	6.469905	0.006573	0.385467
	LINC01186	up	6.409546	0.00174	0.216378
	NONHSAT223306.1	up	6.409546	0.00174	0.216378
	SLC16A1-AS1	up	6.250394	0.001614	0.216378
	XR_430125.2	down	-30.4032	0.00042	0.062794
	LINC00844	down	-28.8462	0.002705	0.062794
	NONHSAT013506.2	down	-26.6209	0.002705	0.062794
	LINC01093	down	-26.0083	0.000273	0.062794
	NONHSAT099579.2	down	-22.2482	0.000273	0.062794
	A2MP1	down	-9.702393	0.000356	0.062794
	NONHSAT161826.1	down	-9.702393	0.000356	0.062794
	LOC105373764	down	-9.685478	0.00005	0.062794
	NONHSAT183166.1	down	-9.685478	0.00005	0.062794
	C3P1	down	-9.527459	0.001042	0.062794
GSE40367	NONHSAT150376.1	up	10.09334	0.002556	0.103234
	NONHSAT073632.2	up	9.626051	0.000564	0.05498
	ENST00000624682.1	up	8.135566	0.000031	0.003617
	ENST00000602609.1	up	6.688906	0.000346	0.02906
	NONHSAT093645.2	up	6.679915	0.009827	0.306808
	ENST00000602609.1	up	6.688906	0.000346	0.02906
	NONHSAT093645.2	up	6.679915	0.009827	0.306808
	OVOS2	up	6.635638	0.000953	0.075262
	NMRAL2P	up	6.128219	0.001682	0.103234
	NR_033752.2	up	6.128219	0.001682	0.103234
	NONHSAT024268.2	down	-15.590468	0.00014	0.004823
	NONHSAT121724.2	down	-13.397352	0.000076	0.004823
	XR_926922.1	down	-9.912165	0.000151	0.004823
	MAGI2-AS3	down	-9.341953333	0.000204667	0.007230667
	ENST00000562300.5	down	-9.189726	0.000515	0.014854
	LOC105370832	down	-9.189726	0.000515	0.014854
	LOC157273	down	-9.082558	0.000457	0.014854
	NONHSAT215396.1	down	-9.082558	0.000457	0.014854
	ENST00000417354.2	down	-8.714519	0.000317	0.011311
	FAM3D-AS1	down	-8.685381	0.000166	0.004823
GSE62232	NONHSAT214730.1	up	2.000594	0.000705	0.001847
	ENST00000588226.5	up	2.01129	0.000159	0.000548
	PARD6G-AS1	up	2.01129	0.000159	0.000548

NR_001578.1	up	2.014546	0.002505	0.005106
TDH	up	2.014546	0.002505	0.005106
NONHSAT177356.1	up	2.016526	0.00104	0.002528
LOC105371453	up	2.018036	0.000004	0.000026
XR_917739.1	up	2.018036	0.000004	0.000026
NONHSAT066299.2	up	2.03482	0.010096	0.015225
LOC105375172	up	2.035126	0.032603	0.036968
NONHSAT101639.2	down	-2.000372	0.000026	0.000122
PART1	down	-2.000372	0.000026	0.000122
LINC-PINT	down	-2.001105	0.039153	0.042336
NONHSAT213991.1	down	-2.001105	0.039153	0.042336
NR_110825.1	down	-2.001473	0.002129	0.004477
NONHSAT092521.2	down	-2.0025	0.000014	0.000072
LOC439933	down	-2.003334	0.038805	0.042034
NONHSAT150653.1	down	-2.003633	0.000053	0.000222
ENST00000578662.1	down	-2.00697	0.041058	0.043781
LOC101927539	down	-2.00697	0.041058	0.043781

Supplementary Table 2. The top 10 upregulated and downregulated DEMs in different expression profiles.

Profile	miRNA	style	Fold Change	P-value	FDR
GSE36915	hsa-miR-551b-3p	up	2.732694	0.000198	0.000553
	hsa-miR-96-5p	up	2.589663	0.000087	0.000269
	hsa-miR-10b-5p	up	2.469124	0.015412	0.014288
	hsa-miR-224-5p	up	2.435419	0.010374	0.010986
	hsa-miR-182-5p	up	2.327596	0.005243	0.006487
	hsa-miR-452-3p	up	2.301487	0.000233	0.000636
	hsa-miR-135a-5p	up	2.250943	0.009832	0.010825
	hsa-miR-515-5p	up	2.211741	0.001409	0.002642
	hsa-miR-520h	up	2.163997	0.002988	0.004427
	hsa-miR-501-5p	up	1.98213	0.003605	0.00509
	hsa-miR-203a-3p	down	-3.338125	0.000001	0.000005
	hsa-miR-375	down	-3.151798	0.00187	0.003151
	hsa-miR-1-3p	down	-2.831155	0.000031	0.000118
	hsa-miR-483-3p	down	-2.735831	0.000022	0.000092
	hsa-miR-144-3p	down	-2.731645	0.000047	0.00016
	hsa-miR-10a-5p	down	-2.715267	0.000311	0.00079
	hsa-miR-429	down	-2.536476	0.002207	0.003531
	hsa-miR-542-3p	down	-2.536104	0.000013	0.000062
	hsa-miR-30a-3p	down	-2.524737	0.000117	0.00035
	hsa-miR-200a-3p	down	-2.484562	0.000003	0.00002
GSE74618	hsa-miR-21-5p	up	4.65618	0.000011	0.000181
	hsa-miR-34a-5p	up	4.629343	0.000376	0.003044
	hsa-miR-155-5p	up	3.04827	0.00063	0.004483
	hsa-miR-155-5p	up	3.04827	0.00063	0.004483
	hsa-miR-532-5p	up	2.823342	0.000956	0.005882
	hsa-miR-4322	up	2.560282	0.00006	0.00075
	hsa-miR-502-3p	up	2.26894	0.000063	0.000762
	hsa-miR-1202	up	2.185917	0.001181	0.007133
	hsa-miR-1307-3p	up	2.185861	0.000303	0.002566
	hsa-miR-501-3p	up	2.140183	0.00004	0.000546
	hsa-miR-375	down	-4.040495	0.001517	0.008667
	hsa-miR-486-5p	down	-3.431948	0.000095	0.001033
	hsa-miR-378a-5p	down	-3.396752	0.000018	0.000272
	hsa-miR-497-5p	down	-2.592723	0.000066	0.000779
	hsa-miR-125b-2-3p	down	-2.469376	0.000417	0.003297
	hsa-miR-30a-3p	down	-2.173553	0.00001	0.00017
	hsa-miR-505-3p	down	-2.106977	0.000289	0.002497
	hsa-miR-122-3p	down	-2.074589	0.012504	0.043968
	hsa-miR-424-3p	down	-1.988536	0.001084	0.006604
	hsa-miR-192-3p	down	-1.956065	0.000069	0.000793

Supplementary Table 3. miRNAs and targeted intersected mRNAs in HCC.

miRNA	Gene symbol
hsa-let-7c-5p	ACOX1, AGXT2, ALDH6A1, C7,CYP8B1, DCN, DMD, EPHA7, ESR2, ETNK2, FXN, IDS, IGF1, LIMK2, MASP1, PPP2R2A ,SGCD, SLC10A1, TK1, VSIG4
hsa-miR-10a-5p	ACOX1, ADCY1, ALDH6A1, CAMK2B, ITGA2, MAT1A, PRKAA2, SGCD, TACR1
hsa-miR-10b-5p	ABCG2, BMPR1B, HGF, PDE11A, PDGFRA, PRKAA2, SGCD
hsa-miR-130a-3p	CAMK4, ESR1, FXN, GNAO1, LAMC1, PDGFRA, TRIM71
hsa-miR-182-5p	ACADSB, CAMK4, COL4A1, CYP1A2, DCN, ESR1, GNAO1, PDE11A, SLC4A4
hsa-miR-183-5p	ABAT, ABCC9, ACSM2A, AR, ARRB1, CAMK4, CYP2B6, DBT, FXN, GNAO1, IGF1, SLC4A4, STMN1
hsa-miR-195-5p	AR, BIRC5, CHEK1, GLS2, MASP1, MME, MYB, SEMA6D, SLC4A4
hsa-miR-199a-5p	AADAT, ABCG2, ADH4, AR, CBS, CHEK1, EPHA7, HOGA1, PCK1, PDE11A, PTGIS, SLC8A1
hsa-miR-203a-3p	FHL1, IDS, LAMC1, PLA2R1, PLCB1, PPP1R3B, SGCD
hsa-miR-214-3p	ACLY, ACOX1, ADCY1, APOA5, AR, BAAT, BAX, BCKDHB, CAMK2B, CDCA5 , CYP2C19, CYP8B1, FOXM1, GNAO1, GPT2, IGF1, KMO, LMNA, MASP1, MASP2, NGFR, PDE4A, PRKAA2, SEMA6D, SGCD, SOCS2, TACR1
hsa-miR-216a-5p	ACADSB, ADCY1, BCAT1, CYP8B1, DBT, ESR2, KCNE1, LEPR, PTGIS, SGCD
hsa-miR-222-3p	ACOX1, CAMK4, CD4, COL4A1, DBT, FXN, IGF1, KCNE1, PDE7B, PLA2G16, PRKAA2, SEMA6D, TACR1, TRIM71
hsa-miR-224-5p	AR, ARRB1, AVPR1A, DBT, ESR1, GLS2, PLCB1, PRKAA2, PTGIS
hsa-miR-30a-3p	ADCY1, AR, ARRB1, CAMK4, CD34, ESR1, HPGD, KCNE1, PDE11A, PRKAA2, SGCD, SLC1A1, ST6GAL2, TRIM71, USP25
hsa-miR-375	ADCY10, ADH1B, ADH4, AR, CYP2A6, LEPR, NCAM1, PDE2A, PLCB1, PRLR, SLC8A1, SMAD6, SPAM1, TACR1, TK1
hsa-miR-452-5p	ACACB, ASPA, CAMK4, IDS, IL20RA, NPY1R, PPP1R3B, PRKAA2, SEMA6D, SGCD, SLC4A4, SLC8A1
hsa-miR-455-5p	BAAT, CAMK4, HMGCL, HOGA1, KMO, MASP1, PAK1, VSIG4
hsa-miR-486-5p	ASS1, INMT, KMO, LPCAT1, SOX4
hsa-miR-497-5p	ADCY1, ALDH6A1, BIRC5, CAMK4, CDC6, ESR2, ITGA2, KCNK5, LAMC1, MASP1, MCM5, MME, MYB, SGCD, TRIM71
hsa-miR-505-3p	ABAT, ACOX1, ACVR1C, ADCY1
hsa-miR-99a-5p	ACAA2, ADCY1, AR, CYP1A1, DAPK2, DBT, ESR2, FHL1, GHR, KCNMA1, LEPR, MASP1, PDE11A, PTGS2, SLC16A10, SLC4A4, TF, TNXB, TRIM71

Supplementary Table 4. miRNAs and targeted intersected lncRNAs in HCC.

lncRNA	miRNA
MCM3AP-AS1	hsa-miR-455-5p, hsa-miR-214-3p, hsa-miR-497-5p, hsa-miR-497-5p, hsa-miR-199a-5p, hsa-miR-30a-3p, hsa-miR-182-5p, hsa-miR-195-5p
GBAP1	hsa-miR-486-5p, hsa-miR-497-5p, hsa-miR-199a-5p, hsa-miR-182-5p, hsa-miR-224-5p, hsa-miR-195-5p, hsa-miR-30a-3p
SLC16A1-AS1	hsa-let-7c-5p, hsa-miR-497-5p, hsa-miR-183-5p, hsa-miR-130a-3p, hsa-miR-222-3p, hsa-miR-455-5p, hsa-miR-486-5p, hsa-miR-505-3p
NONHSAT172507.1	hsa-miR-10a-5p, hsa-miR-214-3p, hsa-miR-10b-5p, hsa-miR-505-3p, hsa-miR-199a-5p, hsa-miR-182-5p, hsa-miR-195-5p, hsa-miR-222-3p, hsa-miR-10a-5p, hsa-miR-455-5p
NONHSAT191112.1	hsa-miR-455-5p, hsa-miR-214-3p, hsa-miR-497-5p, hsa-miR-30a-3p, hsa-miR-182-5p, hsa-miR-195-5p
PCBP1-AS1	hsa-miR-455-5p, hsa-let-7c-5p, hsa-miR-497-5p, hsa-miR-199a-5p, hsa-miR-183-5p, hsa-miR-224-5p, hsa-let-7c-5p, hsa-miR-497-5p, hsa-miR-214-3p, hsa-miR-216a-5p, hsa-miR-203a-3p, hsa-miR-497-5p, hsa-miR-30a-3p, hsa-miR-10b-5p, hsa-miR-182-5p, hsa-miR-224-5p, hsa-miR-505-3p, hsa-miR-195-5p, hsa-miR-10a-5p, hsa-miR-216a-5p, hsa-miR-30a-3p
LINC01128	hsa-miR-214-3p, hsa-miR-224-5p, hsa-miR-183-5p, hsa-miR-99a-5p, hsa-miR-199a-5p, hsa-miR-497-5p, hsa-miR-216a-5p, hsa-miR-10b-5p, hsa-miR-505-3p, hsa-miR-195-5p, hsa-miR-30a-3p, hsa-miR-203a-3p, hsa-miR-497-5p, hsa-miR-10a-5p
HAND2-AS1	hsa-miR-216a-5p, hsa-miR-222-3p, hsa-miR-183-5p, hsa-let-7c-5p, hsa-miR-452-5p, hsa-miR-455-5p
MAGI2-AS3	hsa-let-7c-5p, hsa-miR-10a-5p, hsa-let-7c-5p, hsa-miR-30a-3p, hsa-miR-10b-5p, hsa-let-7c-5p, hsa-miR-183-5p, hsa-miR-195-5p, hsa-miR-222-3p, hsa-miR-455-5p, hsa-miR-452-5p, hsa-miR-130a-3p, hsa-miR-203a-3p
C3P1	hsa-miR-216a-5p, hsa-miR-224-5p, hsa-miR-224-5p
NONHSAT035498.2	hsa-let-7c-5p, hsa-miR-182-5p, hsa-miR-486-5p, hsa-miR-199a-5p, hsa-miR-452-5p
GAS5	hsa-let-7c-5p, hsa-miR-455-5p, hsa-miR-30a-3p, hsa-miR-452-5p
CYTOR	hsa-let-7c-5p, hsa-miR-455-5p, hsa-miR-182-5p, hsa-miR-497-5p
DIO3OS	hsa-miR-455-5p, hsa-miR-214-3p, hsa-let-7c-5p, hsa-miR-214-3p, hsa-miR-216a-5p, hsa-miR-224-5p,
HNF4A-AS1	hsa-miR-182-5p, hsa-miR-224-5p, hsa-miR-195-5p, hsa-miR-222-3p
NONHSAT202693.1	hsa-miR-452-5p, hsa-miR-224-5p, hsa-let-7c-5p, hsa-miR-10a-5p, hsa-miR-10b-5p, hsa-miR-30a-3p, hsa-miR-214-3p

Supplementary Table 5. Top 20 degree of genes in PPI network.

Gene symbol	Biotype	style	Degree
ESR1	mRNA	down	17
IGF1	mRNA	down	15
BIRC5	mRNA	up	12
CD34	mRNA	up	10
FOXM1	mRNA	up	9
ITGA2	mRNA	up	9
AR	mRNA	down	9
ACLY	mRNA	up	9
ACACB	mRNA	down	9
DCN	mRNA	down	8
CYP2B6	mRNA	down	8
ABCG2	mRNA	down	7
CDC6	mRNA	up	7
BAX	mRNA	up	7
CHEK1	mRNA	up	6
TK1	mRNA	up	6
PDGFRA	mRNA	down	6
MCM5	mRNA	up	6
DBT	mRNA	down	5
HGF	mRNA	down	5