

**Table S1 The top 15 up-regulated and 15 down-regulated DEmRNAs in Wilms' tumor samples**

DEmRNAs	Top 15 up-regulated mRNAs			DEmRNAs	Top 15 down-regulated mRNAs		
	Ensembl ID	logFC	FDR		Ensembl ID	logFC	FDR
EYA1	ENSG00000104313	9.10	4.45E-163	SLC4A1	ENSG00000004939	-9.09	4.52E-79
COL2A1	ENSG00000139219	10.57	4.45E-163	MFS4	ENSG00000174514	-6.62	1.37E-58
SOX11	ENSG00000176887	8.22	3.52E-158	ANXA9	ENSG00000143412	-4.15	1.87E-58
SIX2	ENSG00000170577	12.51	3.64E-141	GCNT3	ENSG00000140297	-7.56	2.22E-57
SIX1	ENSG00000126778	8.86	1.37E-126	AQP2	ENSG00000167580	-13.93	1.60E-56
NUSAP1	ENSG00000137804	4.84	4.18E-108	ZNF44	ENSG00000197857	-3.02	6.20E-55
TOP2A	ENSG00000131747	5.51	1.15E-104	FAM167B	ENSG00000183615	-4.49	8.59E-55
ELOVL2	ENSG00000197977	7.86	1.20E-104	CLCNKA	ENSG00000186510	-10.27	3.25E-54
ST8SIA2	ENSG00000140557	8.52	9.68E-98	RCAN1	ENSG00000159200	-3.97	7.69E-52
MEOX1	ENSG00000005102	8.77	1.29E-96	NOSTRIN	ENSG00000163072	-3.22	2.32E-50
APBA2	ENSG00000034053	4.76	5.51E-95	SLC4A9	ENSG00000113073	-6.87	2.98E-50
NCAPG	ENSG00000109805	5.11	9.19E-90	ELMO3	ENSG00000102890	-4.74	5.46E-50
KIF15	ENSG00000163808	5.41	1.99E-88	PTGER1	ENSG00000160951	-7.35	6.11E-50
ARHGAP11A	ENSG00000198826	4.47	5.69E-88	RASD1	ENSG00000108551	-7.54	1.19E-49
NKAIN1	ENSG00000084628	8.54	6.10E-88	AVPR2	ENSG00000126895	-7.43	2.44E-48

**Table S2 The top 15 up-regulated and 15 down-regulated DElncRNAs in Wilms' tumor samples**

DElncRNAs	Top 15 up-regulated lncRNAs			Top 15 down-regulated lncRNAs			
	Ensembl ID	logFC	FDR	DElncRNAs	Ensembl ID	logFC	FDR
UG0898H09	ENSG00000274956	9.27	1.40E-87	RP13-452N2.1	ENSG00000242048	-11.33	4.07E-68
IGF2-AS	ENSG00000099869	6.93	4.25E-55	PP7080	ENSG00000188242	-3.43	4.25E-68
RP11-1102P16.1	ENSG00000253379	5.10	1.26E-52	RP11-317M11.1	ENSG00000249341	-8.79	1.26E-52
CTD-2147F2.1	ENSG00000259485	6.87	3.79E-41	LINC00675	ENSG00000263429	-9.17	7.10E-43
SLC16A1-AS1	ENSG00000226419	3.05	1.32E-40	RP11-728F11.4	ENSG00000254528	-4.01	1.16E-39
HAS2-AS1	ENSG00000248690	5.11	4.75E-35	RP11-61L19.2	ENSG00000273335	-7.20	1.56E-36
GDNF-AS1	ENSG00000248587	5.39	6.38E-34	LINC01543	ENSG00000263862	-7.30	2.51E-36
WT1-AS	ENSG00000183242	4.88	3.46E-31	LA16c-329F2.1	ENSG00000261399	-6.03	7.53E-36
RP11-159H10.3	ENSG00000246528	6.74	7.84E-31	RP3-395M20.8	ENSG00000238164	-4.78	1.20E-35
RP11-244M2.1	ENSG00000267374	6.80	6.23E-30	FLJ31356	ENSG00000229951	-4.77	2.49E-34
RP11-629G13.1	ENSG00000247416	4.75	1.61E-29	LINC00671	ENSG00000213373	-5.86	3.76E-30
FZD10-AS1	ENSG00000250208	3.99	8.43E-29	RP11-352D13.5	ENSG00000259504	-6.14	1.87E-28
AP000662.4	ENSG00000254602	4.89	3.49E-28	RP11-933H2.4	ENSG00000250608	-3.60	4.76E-27
ZIM2-AS1	ENSG00000269793	4.12	3.49E-28	RP11-573D15.8	ENSG00000197099	-5.49	1.29E-26
LINC00327	ENSG00000232977	4.24	5.80E-28	RP11-47I22.2	ENSG00000250548	-5.11	1.14E-25

**Table S3 The top 15 up-regulated and 15 down-regulated DEmiRNAs in Wilms' tumor samples**

Top 15 up-regulated miRNAs			Top 15 down-regulated miRNAs		
DEmiRNAs	logFC	FDR	DEmiRNAs	logFC	FDR
hsa-mir-483	6.24	1.28E-32	hsa-mir-29c	-4.27	1.12E-24
hsa-mir-130b	4.81	2.10E-26	hsa-mir-190a	-2.55	2.67E-20
hsa-mir-301b	6.34	1.20E-21	hsa-mir-23a	-2.41	2.69E-16
hsa-mir-301a	3.12	1.21E-21	hsa-mir-22	-3.02	2.87E-14
hsa-mir-218-1	3.61	1.11E-20	hsa-mir-30a	-4.01	1.88E-13
hsa-mir-218-2	3.64	1.11E-20	hsa-mir-30b	-2.52	2.45E-13
hsa-mir-93	3.08	1.47E-20	hsa-mir-29a	-4.10	4.37E-13
hsa-mir-18a	3.60	2.76E-15	hsa-mir-29b-1	-3.39	6.04E-13
hsa-mir-149	3.18	9.31E-15	hsa-mir-27a	-2.45	5.70E-12
hsa-mir-335	3.26	2.90E-14	hsa-mir-29b-2	-2.87	2.45E-11
hsa-mir-182	3.71	6.83E-14	hsa-mir-203a	-5.50	3.87E-10
hsa-mir-183	3.87	7.41E-14	hsa-mir-139	-2.72	7.64E-10
hsa-mir-20a	2.23	2.52E-13	hsa-mir-194-1	-2.02	7.43E-09
hsa-mir-342	2.64	2.52E-13	hsa-mir-192	-2.12	9.86E-08
hsa-mir-383	9.42	2.52E-13	hsa-mir-193a	-2.27	9.86E-08

**Table S4 The top 10 DElncRNAs targeted by most DEMiRNAs in the ceRNA network**

DElncRNAs	DEmiRNAs
FAM225B	hsa-mir-23a, hsa-mir-30a, hsa-mir-30b, hsa-mir-204, hsa-mir-25, hsa-mir-301a, hsa-mir-301b, hsa-mir-454, hsa-mir-27a, hsa-mir-503, hsa-mir-29a, hsa-mir-29c, hsa-mir-150, hsa-mir-93, hsa-mir-17, hsa-mir-206, hsa-mir-20a, hsa-mir-195, hsa-mir-497, hsa-mir-135b, hsa-mir-196b, hsa-mir-200a
RP11-398K22.12	hsa-mir-29a, hsa-mir-29c, hsa-mir-22, hsa-mir-30a, hsa-mir-30b, hsa-mir-17, hsa-mir-20a, hsa-mir-93, hsa-mir-150, hsa-mir-33a, hsa-mir-200a, hsa-mir-503, hsa-mir-195, hsa-mir-497, hsa-mir-196b, hsa-mir-206, hsa-mir-301a, hsa-mir-301b, hsa-mir-454, hsa-mir-187
AC011747.4	hsa-mir-195, hsa-mir-497, hsa-mir-301a, hsa-mir-301b, hsa-mir-454, hsa-mir-33a, hsa-mir-22, hsa-mir-29a, hsa-mir-29c, hsa-mir-182, hsa-mir-135b, hsa-mir-25, hsa-mir-18a, hsa-mir-503, hsa-mir-150, hsa-mir-93, hsa-mir-190a, hsa-mir-17, hsa-mir-20a, hsa-mir-23a, hsa-mir-133b, hsa-mir-30a, hsa-mir-30b, hsa-mir-206, hsa-mir-27a
AC018890.6	hsa-mir-33a, hsa-mir-133b, hsa-mir-96, hsa-mir-200b, hsa-mir-429, hsa-mir-196b, hsa-mir-17, hsa-mir-20a, hsa-mir-93, hsa-mir-150, hsa-mir-204, hsa-mir-182, hsa-mir-27a, hsa-mir-21, hsa-mir-22, hsa-mir-29a, hsa-mir-29c, hsa-mir-301a, hsa-mir-301b, hsa-mir-454, hsa-mir-23a
AC093627.10	hsa-mir-195, hsa-mir-497, hsa-mir-150, hsa-mir-135b, hsa-mir-21, hsa-mir-190a, hsa-mir-200a, hsa-mir-30a, hsa-mir-30b, hsa-mir-25, hsa-mir-33a, hsa-mir-27a, hsa-mir-133b, hsa-mir-29a, hsa-mir-29c, hsa-mir-22, hsa-mir-200b, hsa-mir-429, hsa-mir-23a, hsa-mir-301a, hsa-mir-301b, hsa-mir-454, hsa-mir-503
STARD4-AS1	hsa-mir-204, hsa-mir-29a, hsa-mir-29c, hsa-mir-21, hsa-mir-133b, hsa-mir-150, hsa-mir-33a, hsa-mir-23a, hsa-mir-22, hsa-mir-195, hsa-mir-497, hsa-mir-96, hsa-mir-187, hsa-mir-17, hsa-mir-20a, hsa-mir-93, hsa-mir-206, hsa-mir-18a
RP11-933H2.4	hsa-mir-204, hsa-mir-23a, hsa-mir-196b, hsa-mir-503, hsa-mir-27a, hsa-mir-200a, hsa-mir-195, hsa-mir-497, hsa-mir-200b, hsa-mir-429, hsa-mir-25, hsa-mir-301a, hsa-mir-301b, hsa-mir-454, hsa-mir-17, hsa-mir-20a, hsa-mir-93, hsa-mir-18a, hsa-mir-206
CTD-233717.1	hsa-mir-204, hsa-mir-195, hsa-mir-497, hsa-mir-22, hsa-mir-27a, hsa-mir-17, hsa-mir-20a, hsa-mir-93, hsa-mir-29a, hsa-mir-29c, hsa-mir-33a, hsa-mir-503, hsa-mir-182, hsa-mir-23a, hsa-mir-150, hsa-mir-200b, hsa-mir-429, hsa-mir-301a, hsa-mir-301b, hsa-mir-454, hsa-mir-96, hsa-mir-135b
AP000997.2	hsa-mir-204, hsa-mir-150, hsa-mir-200a, hsa-mir-21, hsa-mir-200b, hsa-mir-429, hsa-mir-196b, hsa-mir-206, hsa-mir-96, hsa-mir-25, hsa-mir-93, hsa-mir-27a, hsa-mir-22, hsa-mir-33a, hsa-mir-195, hsa-mir-497, hsa-mir-190a, hsa-mir-182, hsa-mir-135b, hsa-mir-17, hsa-mir-503, hsa-mir-20a, hsa-mir-18a, hsa-mir-301a, hsa-mir-301b, hsa-mir-454,
RP11-438B23.2	hsa-mir-21, hsa-mir-204, hsa-mir-200a, hsa-mir-503, hsa-mir-133b, hsa-mir-135b, hsa-mir-190a, hsa-mir-200b, hsa-mir-429, hsa-mir-150, hsa-mir-206, hsa-mir-33a, hsa-mir-23a, hsa-mir-25, hsa-mir-182, hsa-mir-196b, hsa-mir-22, hsa-mir-30a, hsa-mir-30b, hsa-mir-29a, hsa-mir-29c, hsa-mir-18a, hsa-mir-17, hsa-mir-20a, hsa-mir-93, hsa-mir-195, hsa-mir-497

The 759 DElncRNAs and 39 DEMiRNAs were paired according to the miRcode database. The top 10 differently expressed lncRNAs targeted by most differently expressed miRNAs in the ceRNA network were showed.

**Table S5 All the 33 DEmiRNAs with their target DEmRNAs in the ceRNA network**

DEmiRNAs	DEmRNAs
hsa-mir-133b	FOXL2, SGK1
hsa-mir-135b	KLF4, LZTS1, ARC
hsa-mir-150	MYB, EGR2
hsa-mir-17	E2F1, ENPP5, PLS1, ITGB8, ZBTB4, STAT3, SMOC1, PARD6B, RRM2, TXNIP, KPNA2, CHAF1A, ANKRD33B, SALL3, PRRG1, ETV1, TBC1D2, CEP170, ATAD2, NETO2, FOXQ1, HMGB3, DUSP2, NACC2, KIF23, ELAVL2, SAMD12, ZBTB7A, HAS2, ZNF280B, SACS, POLQ, FAM102A, E2F2, DENND5B, ARAP2, NTN4, EGR2
hsa-mir-182	MITF, FGF9, THBS1, PLEKHA8, PCDH8
hsa-mir-187	BCL6
hsa-mir-18a	IGF2BP2, HSF2, PARD6B, CRIM1
hsa-mir-190a	KCNQ5
hsa-mir-195	CCNE1, WNT7A, MYB, CEP55, BTG2, MAFK, CPEB2, PSAT1, HSPE1-MOB4, TLE4, CHEK1, CBX2, CRIM1, ITGA2, CDC25A, E2F7, CDCA4, TMEM100, KIF23, CPEB3, RS1, HOXA10, CLSPN, MKX, PTPRD, PHF19, NOTCH2, B4GALT1, GABARAPL1, JARID2,
hsa-mir-196b	HMGA2, NAP1L1, IGF2BP3
hsa-mir-200a	CCNE2, PTPRD, USP53, ELAVL2, H2AFZ, DEK, THRB
hsa-mir-200b	GATA4, WASF3, PARD6B, LOX, DENND5B, PRRG4, ETV5, FSCN1
hsa-mir-204	ARHGAP29, CDH2, HAS2, JARID2, ARAP2, CHD5
hsa-mir-206	PAX3, GJA1, STC2, ANXA2
hsa-mir-20a	E2F1, CRIM1, STAT3, NETO2, DUSP2, ITGB8, EGR2, SMOC1, PARD6B, RRM2, TXNIP, KPNA2, CHAF1A, ANKRD33B, SALL3, PRRG1, ETV1, ZNF280B, ZBTB7A, ZBTB4, SACS, POLQ, KIF23, FAM102A, E2F2, DENND5B, ARAP2, CEP170, ATAD2, FOXQ1, HMGB3, NACC2, ELAVL2, PLS1, ENPP5, SAMD12, HAS2, KIF26B, NTN4
hsa-mir-21	RASGRP1, TIMP3, MSH2, TIAM1, CCL20, CPEB3, PBRM1, SKP2, OSR1, STAT3
hsa-mir-22	TIAM1
hsa-mir-23a	PPARGC1A, QSER1, FBN2, GJA1, TRIM63
hsa-mir-25	KLF4, CCNE2, CHCHD10, PKDCC, ROBO1, BTG2, TOB1, MAP1B, SOX11, SLC12A5, HAND2, TRIM36, PAX9, LHFPL2, CPEB3, CHST1
hsa-mir-27a	THRB, FOXP4, SEMA6A, SLC7A11, PPARG, HOXA10, GATA2, PEG10, FAM84B, E2F7, DKK2
hsa-mir-29a	CD276, TET1, CPEB3, TRIM63, MYCN, NAV3, PXDN, KLF4, CCND2, LOX, IGF1, TFEB, SLC16A1, SGK1, FOS, DUSP2, CCNA2, ENPP2, ROBO1, AHR
hsa-mir-29c	CD276, COL7A1, BACH2, MYCN, CCND2, LOX, SLC16A1, SGK1, FOS, DUSP2, CCNA2, ENPP2, KLF4
hsa-mir-301a	MEOX2, CEP55, SMOC1, SALL3, EDN1, DLG5, ZBTB4, RBM20, CEP170, ENPP5, MB21D2, DEPDC1, RACGAP1, IRF1, JARID2
hsa-mir-301b	CEP55, SMOC1, SALL3, EDN1, DLG5, ZBTB4, RBM20, CEP170, ENPP5, MB21D2, DEPDC1, RACGAP1, IRF1, JARID2, NR3C2
hsa-mir-30a	CPNE8, FOXD1, FOXG1, HIC2, ZBTB39, DBF4, CBX2, SOCS3, SOCS1, SIX4, CELSR3, PCDH10, MYBL2, LIN28B, LHFPL2, IP6K3, EPB41, NCAM1, CCNE2, SKP2, KLF9
hsa-mir-30b	CCNE2, SOCS1, CDCA7, HIC2, SERPINE1, SIX1, FOXG1, ZBTB39, DBF4, CBX2, SOCS3, SIX4, CELSR3, PCDH10, MYBL2, LIN28B, LHFPL2, IP6K3, EPB41, HOXA1

hsa-mir-33a	PIM3, DSC3, HMGA2, CPT1A
hsa-mir-429	WASF3, PARD6B, DENND5B, PRRG4, FSCN1
hsa-mir-454	ZBTB4, CEP55, SMOC1, SALL3, EDN1, DLG5, RBM20, CEP170, ENPP5, MB21D2, DEPDC1, RACGAP1, IRF1, JARID2
hsa-mir-497	WNT7A, CHEK1, CEP55, CCND2, CCNE1, PSAT1, HSPE1-MOB4, GABARAPL1, CBX2, CRIM1, ITGA2, CDC25A, E2F7, CDCA4, TMEM100, KIF23, CPEB3, JARID2, HOXA10, CLSPN, MKX, PTPRD, PHF19, NOTCH2, RS1
hsa-mir-503	CCND2, JARID2
hsa-mir-93	E2F1, ITGB8, GPR137C, NACC2, IRF1, EGR2, PRRG1, SAMD12, OSR1, KLF9, MED12L, STAT3, KPNA2, ZBTB7A, ZBTB4, SMOC1, PARD6B, TXNIP, CHAF1A, ANKRD33B, SALL3, CEP170, ATAD2, NETO2, FOXQ1, HMGB3, DUSP2, ELAVL2, PLS1, ENPP5, HAS2, ZNF280B, SACS, POLQ, FAM102A, E2F2, DENND5B, ARAP2, RRM2, KIF23
hsa-mir-96	PRDM16, ALK, SLC1A1, GDNF

The 394 differently expressed miRNA-mRNA pairs were identified including 189 mRNAs and 33 miRNAs based on the three databases: Targetscan, miRTarBase and miRDB. Only the mRNAs predicted by all the above three databases were defined as the target mRNAs.

**Table S6 Multivariable Cox regression coefficient for each RNA with potential prognostic value and 4 vital clinical variables**

RNA	histologic classification (FAWT vs DAWT)	tumor stage (I+II vs III+IV)	age (>=5 vs <5)	gender (female vs male)	RNA (low vs high)
DBF4	0.371	1.337	0.663	0.921	-0.215
DEPDC1	0.391	1.401	0.69	0.908	-0.13
QSER1	0.383	1.411	0.713	0.914	-0.094
IGF2BP2	0.347	1.475	0.612	0.975	-0.404
NTN4	0.392	1.418	0.759	0.929	-0.122
FGF9	0.393	1.406	0.718	0.913	-0.108
CCNE1	0.393	1.432	0.757	0.922	0.121
BCL6	0.411	1.45	0.753	0.96	-0.209
KLF9	0.379	1.518	0.87	0.941	-0.408
MYCN	0.35	1.42	0.748	0.977	-0.29
FOXP4	0.378	1.434	0.743	0.918	0.162
OSR1	0.433	1.377	0.747	0.909	0.24
CHEK1	0.372	1.431	0.739	0.914	0.247
RP11-93B14.6	0.392	1.411	0.719	1.004	0.312
CDCA4	0.404	1.411	0.735	0.967	0.285
SAMD12	0.289	1.411	0.661	0.88	-0.452
ARC	0.383	1.414	0.734	0.933	-0.025
AC062017.1	0.42	1.407	0.707	0.98	0.498
RP11-495P10.3	0.386	1.413	0.718	0.927	0.053

RP11-576D8.4	0.362	1.363	0.691	0.946	-0.391
LAMP5-AS1	0.456	1.342	0.846	0.862	-0.516
SHANK2-AS1	0.35	1.406	0.758	0.932	0.186
AC135178.7	0.496	1.536	0.857	1.028	0.716
RP1-101K10.6	0.392	1.411	0.726	0.929	0.067
RP11-284F21.7	0.27	1.412	0.668	0.886	-0.461
AC114803.3	0.346	1.455	0.744	0.961	-0.262
AC013275.2	0.351	1.438	0.759	0.961	-0.463
RP4-569M23.2	0.393	1.412	0.756	0.951	0.23
AC093702.1	0.594	1.406	0.818	0.93	0.704
RP11-462B18.2	0.385	1.4	0.717	0.932	0.093
SEMA3B-AS1	0.427	1.467	0.867	0.885	-0.48
AC016768.1	0.372	1.417	0.697	0.953	-0.093
LINC01553	0.369	1.432	0.709	0.91	0.264
RP11-3B12.2	0.374	1.458	0.693	0.941	-0.401
RP11-495P10.5	0.386	1.409	0.697	0.938	0.208
RP11-492E3.51	0.407	1.406	0.769	0.926	-0.202
RP11-768G7.2	0.477	1.501	0.756	0.913	0.502
ATP1B3-AS1	0.414	1.386	0.71	0.939	-0.21
AC007009.1	0.38	1.459	0.652	0.961	-0.371
RP11-10L7.1	0.281	1.506	0.709	1.032	0.504
CTD-2024I7.13	0.405	1.443	0.73	0.956	-0.197
RP11-834C11.8	0.38	1.412	0.724	0.989	-0.299
CTB-35F21.1	0.386	1.396	0.712	0.927	0.096
BMPR1B-AS1	0.411	1.434	0.782	0.89	-0.264
LINC01332	0.355	1.434	0.801	0.948	-0.239
RP11-588L15.2	0.448	1.41	0.71	0.864	-0.473
RP11-648L3.2	0.389	1.453	0.733	0.93	0.206
CTB-54I1.1	0.369	1.439	0.683	0.949	-0.28
RP11-430H10.3	0.518	1.438	0.739	0.961	0.332
RP11-45A12.1	0.378	1.414	0.733	0.923	-0.114
RP11-428C19.4	0.338	1.446	0.725	0.947	0.241
RP11-483L5.1	0.574	1.467	0.808	1.055	0.828
DENND5B-AS1	0.372	1.392	0.723	0.932	0.177
RP11-598F7.3	0.44	1.436	0.701	0.963	0.57
TMPO-AS1	0.386	1.403	0.724	0.927	0.068
RP11-290L1.5	0.317	1.454	0.745	0.932	-0.335
RP1-288H2.2	0.27	1.443	0.738	0.947	-0.385
RP11-122D10.1	0.391	1.413	0.75	0.929	0.074
RP11-265N7.1	0.435	1.399	0.752	0.945	0.166
RP11-499F3.1	0.379	1.407	0.718	0.912	-0.07
RP11-646E18.4	0.388	1.422	0.744	0.917	0.076
RP11-800A3.4	0.383	1.409	0.725	0.923	0.027
RP3-523K23.2	0.469	1.554	0.837	0.981	-0.664

RP11-165M1.3	0.331	1.423	0.68	0.981	-0.344
hsa-mir-17	0.377	1.364	0.799	0.867	0.313
hsa-mir-200a	0.364	1.653	0.776	1.123	-1.078
hsa-mir-200b	0.406	1.631	0.776	1.121	-0.852
hsa-mir-20a	0.326	1.374	0.87	0.786	0.53
hsa-mir-21	0.418	1.46	0.769	0.928	-0.15
hsa-mir-429	0.435	1.817	0.782	1.163	-1.099
hsa-mir-93	0.41	1.424	0.845	0.875	0.292

---

The red color represents significant variables with P-value < 0.05.



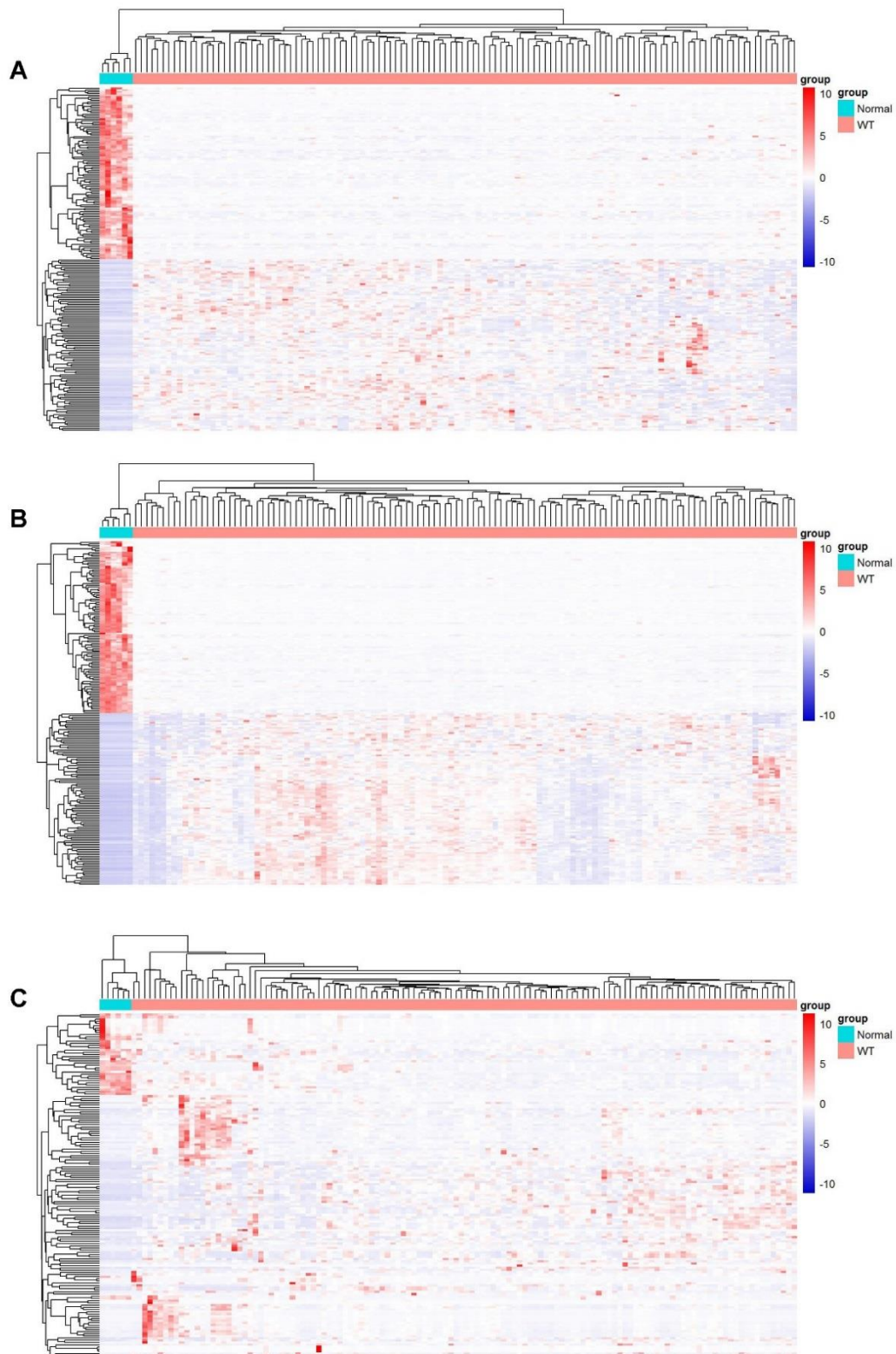


Figure S1. Unsupervised hierarchical clustering heatmaps for differentially expressed RNAs. A is the heatmap with top 100 upregulated and top 100 downregulated lncRNAs, B shows the top 100 upregulated and top 100 downregulated mRNAs and C represents all DE miRNAs including 116 up-regulated and 40 down-regulated miRNAs.