

1 **Supplementary Figure legend**

2 **Supplementary Figure 1:** The violin chart of standardized GSE112556 expression
3 matrix.

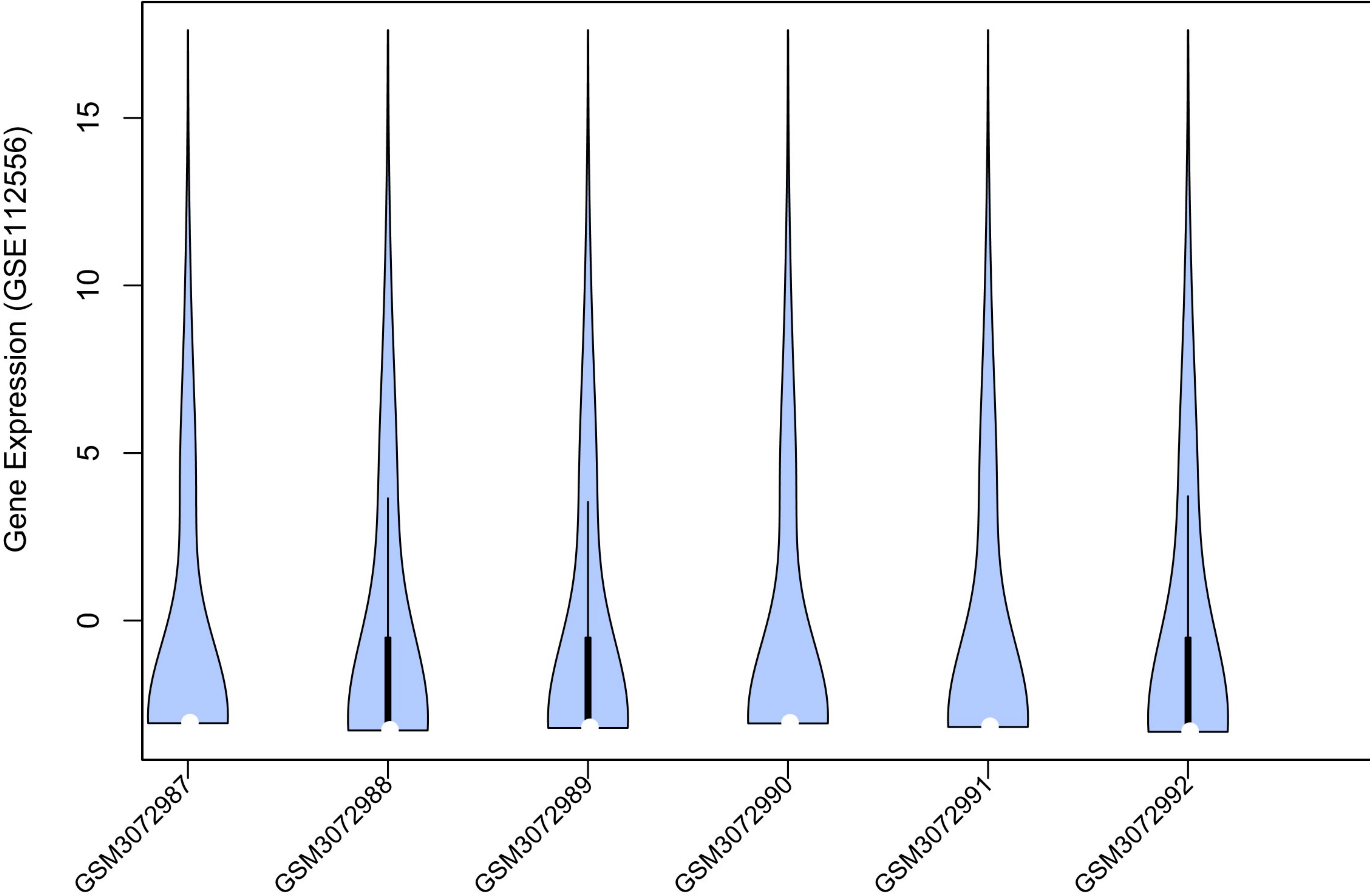
4 **Supplementary Figure 2:** The violin chart of standardized GSE29819 expression
5 matrix.

6 **Supplementary Figure 3:** The violin chart of standardized GSE84796 expression
7 matrix.

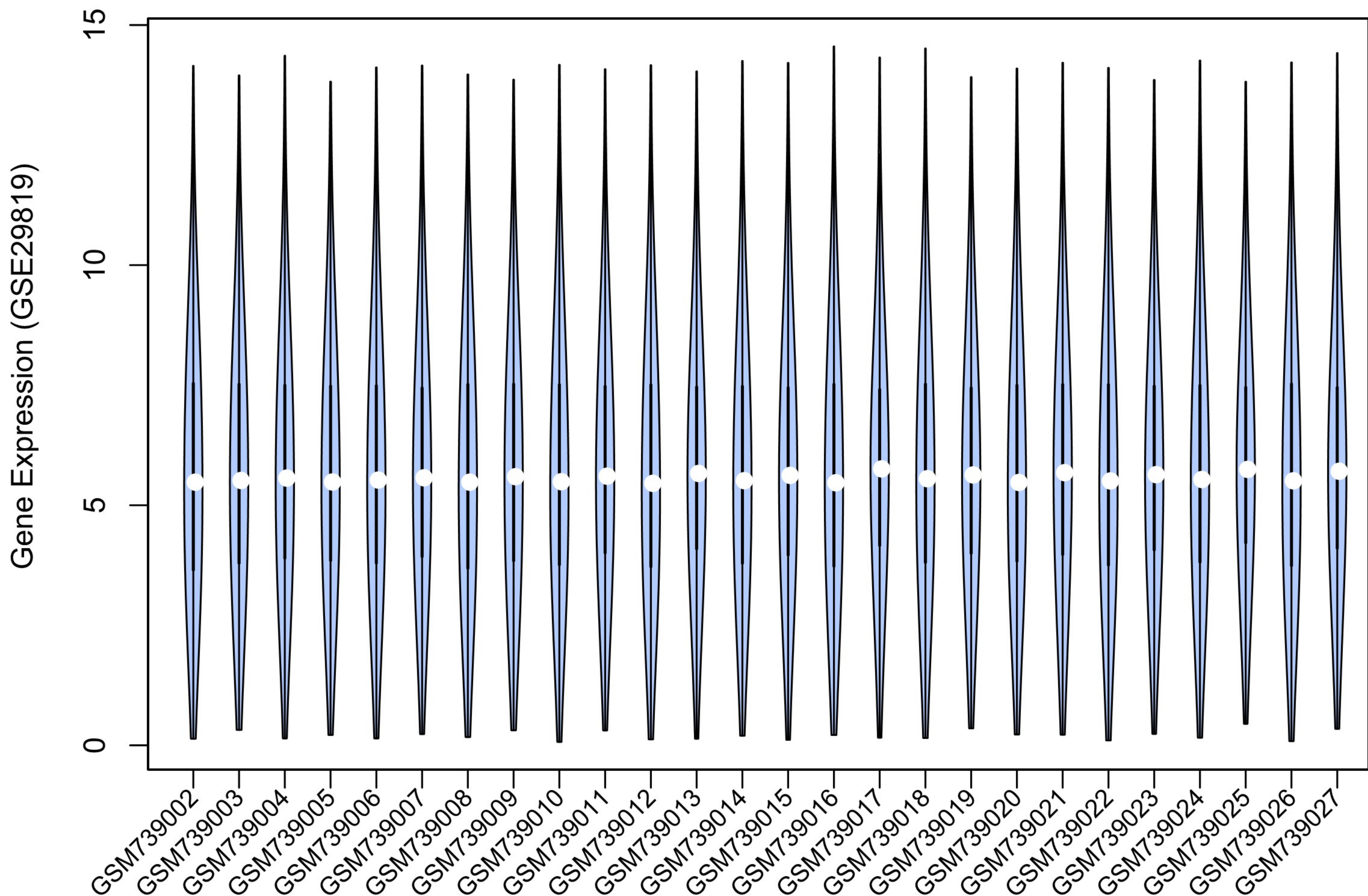
8 **Supplementary Figure 4:** The intersection between miRNA targets and DEMs.

9

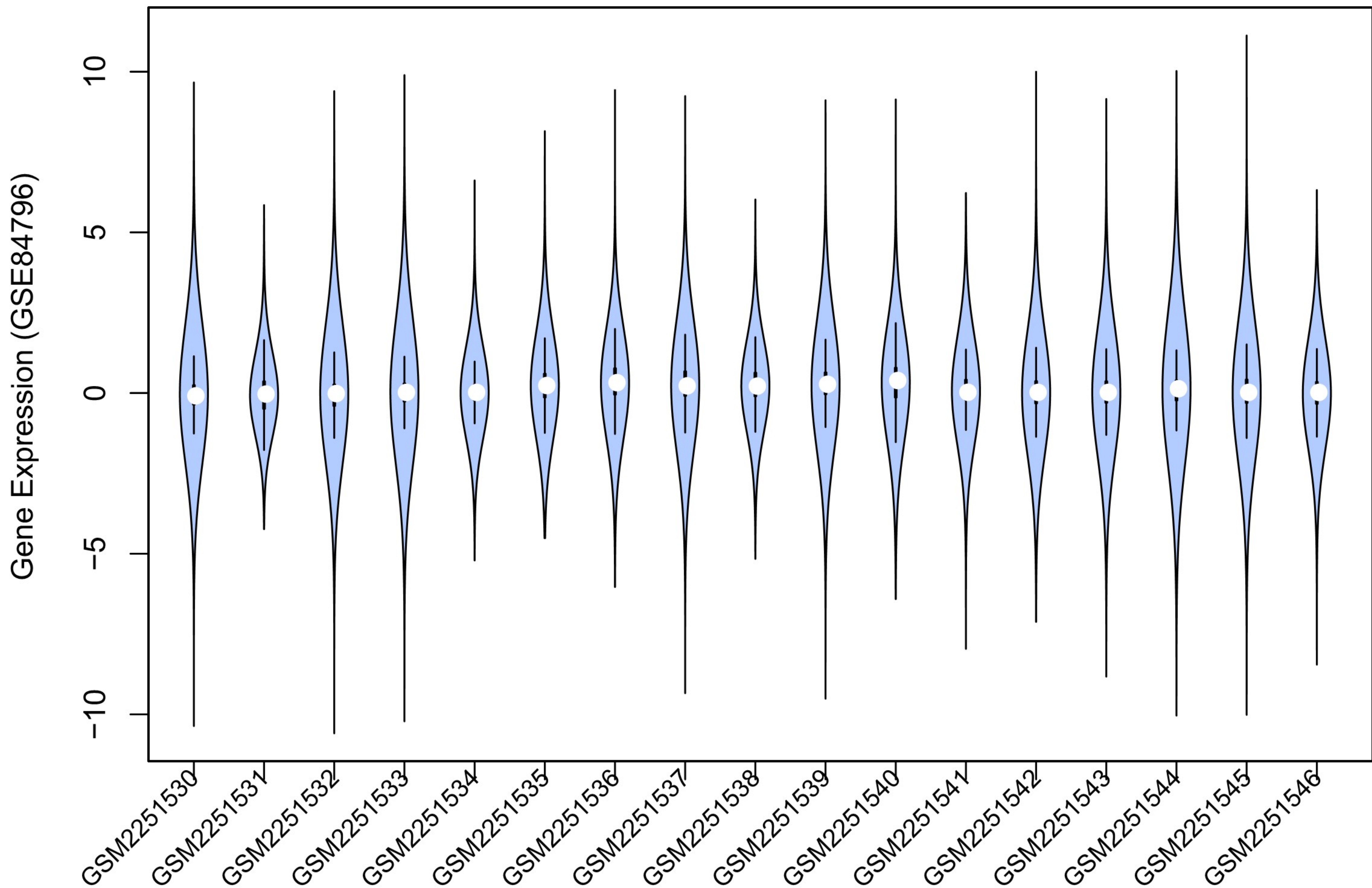
Supplement Figure 1: The violin chart of standardized GSE112556 expression matrix.



Supplement Figure 2: The violin chart of standardized GSE29819 expression matrix

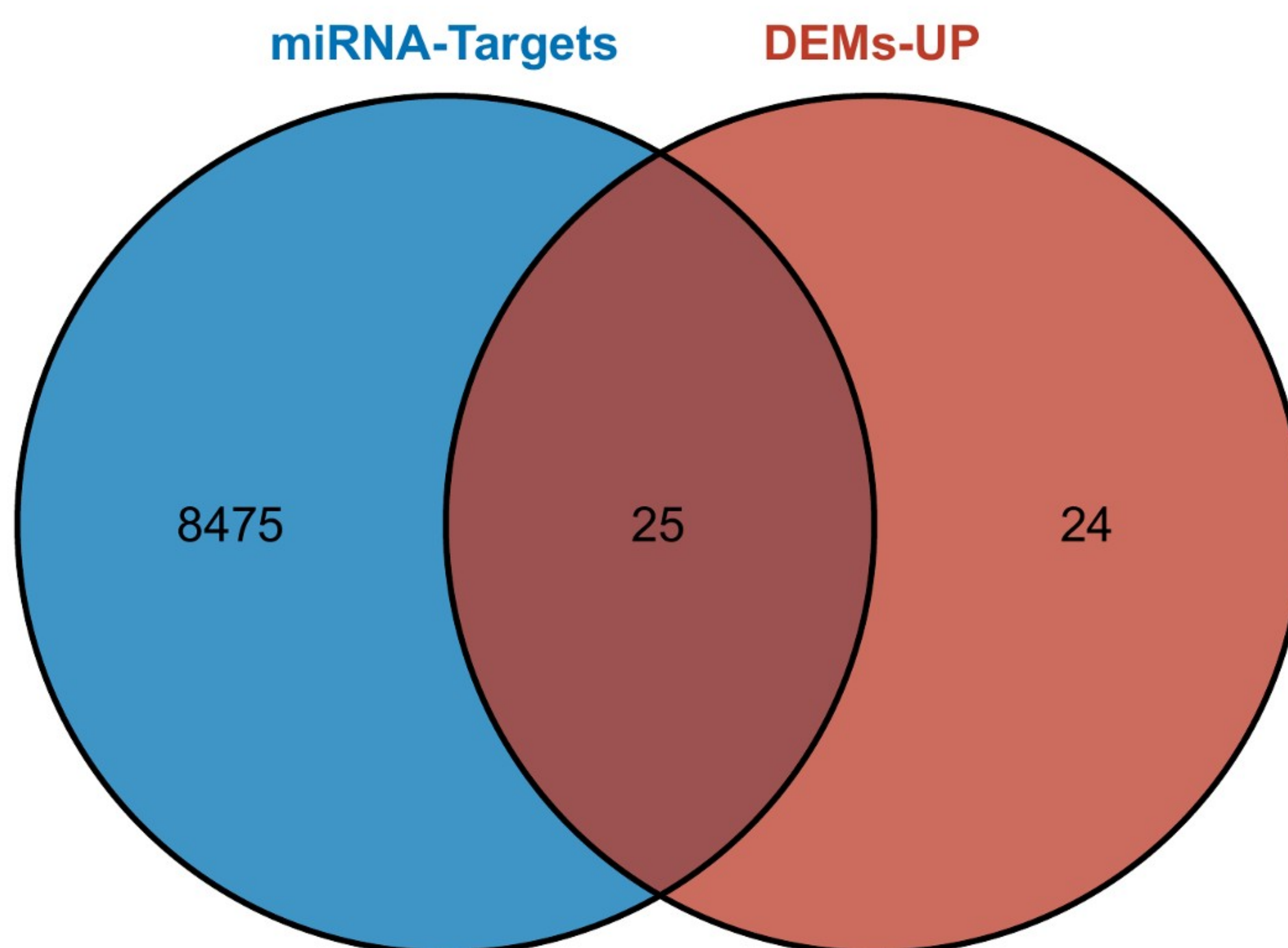


Supplement Figure 3: The violin chart of standardized GSE84796 expression matrix.

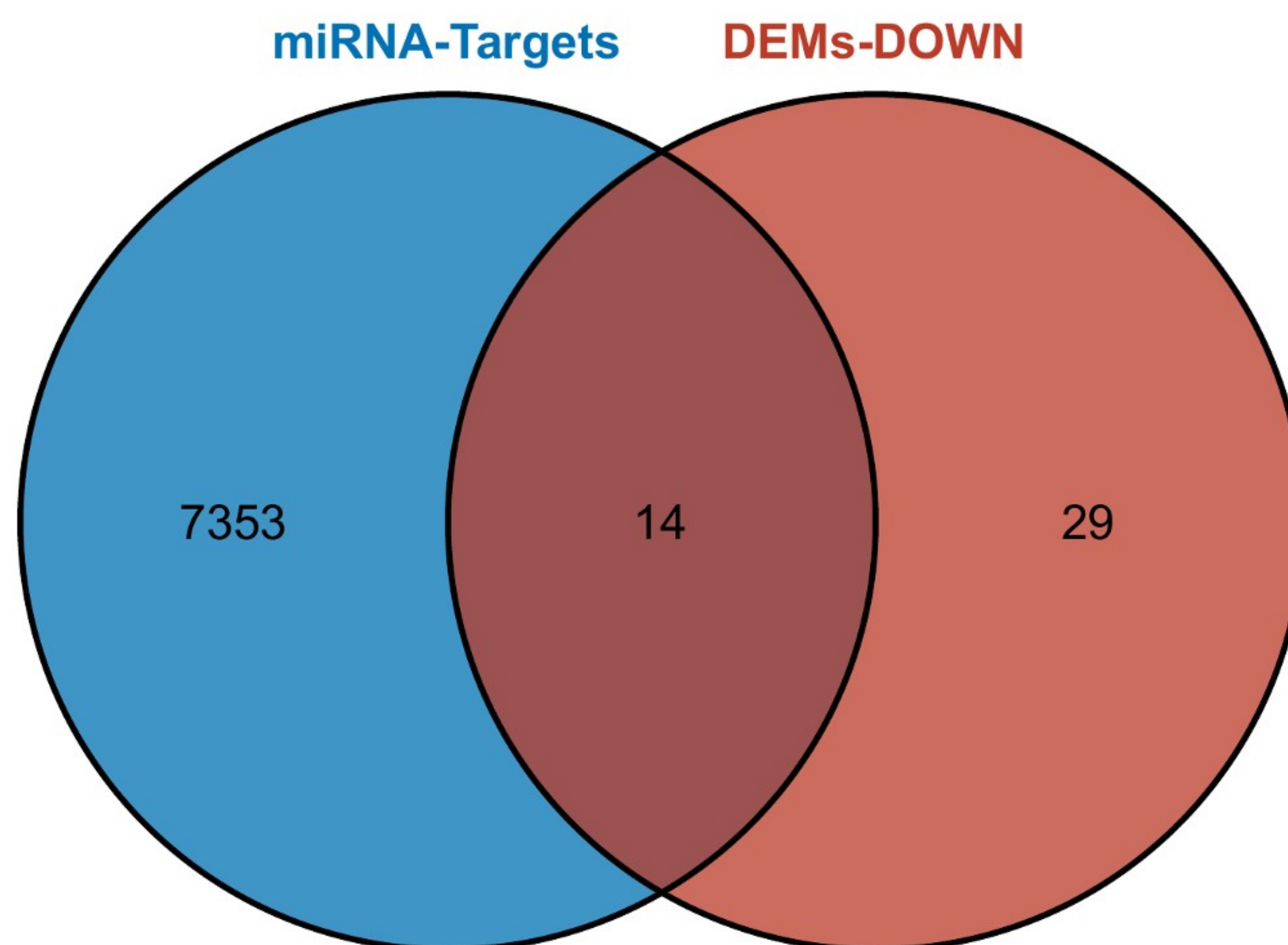


Supplement Figure 4: The intersection between miRNA targets and DEMs

A



B



Supplementary Table 1: The primer sequences of hub gene.

Name	Sequence
hsa-miR-363-3p	5'- AAUUGCACGGUAUCCAUCUGU -3'
hsa-miR-770-5p	5'- AGCACCACGUGUCUGGGCCACG -3'
hsa-miR-551b-5p	5'- GAAAUCAAGCUUGGGUGAGACCU -3'
CXCR4	F: 5'- CTGGCTTTCTTTGCCTGCTG -3' R: 5'- ACGCTCTCGAACTCACATCC -3'
DDIT4	F: 5'- TCTTGTCCGCAATCTTCGCT -3' R: 5'- GGAGGACGAGAAACGATCCC -3'
PIK3R1	F: 5'- CAGGAGCGGTACAGCAAAGA -3' R: 5'- GCTGTCGATGATCTCGCTGA -3'

Supplement Table 2: Differentially expressed mRNA (DEMs) in GSE29819.

Name	Log2FC	P value	Adjusted P value	Name	Log2FC	P value	Adjusted P value
SLCO5A1	-1.908	3.06E-11	3.31E-07	LOC283861	1.689819	3.81E-05	0.001667
OMD	1.772609	8.63E-10	1.70E-06	FAM179A	-1.61185	4.87E-05	0.001966
ZMAT1	1.00447	2.08E-09	2.76E-06	KCNJ5	-1.16223	5.42E-05	0.00211
DDIT4	1.960508	2.39E-09	2.76E-06	MARVELD2	-1.23301	5.91E-05	0.002252
PIK3R1	1.918066	2.51E-09	2.76E-06	PRRT2	1.300242	6.55E-05	0.002428
FAM167B	-2.94145	3.64E-09	3.59E-06	CA14	-2.24087	7.54E-05	0.002651
NAP1L3	2.485702	4.81E-09	4.53E-06	NR4A3	-2.29632	7.68E-05	0.002696
TSC22D3	1.742999	5.06E-09	4.56E-06	MRGPRF	-1.38154	7.70E-05	0.002697
TUBB2A	-1.11612	2.61E-08	1.34E-05	P2RY2	-1.33949	9.35E-05	0.003129
FCN3	-2.19401	3.94E-08	1.94E-05	MNS1	1.195385	0.0001	0.003292
FRZB	1.502989	4.83E-08	2.23E-05	C16orf89	1.364431	0.00011	0.003502
CHRD1	1.875524	9.69E-08	3.59E-05	CDCA2	-1.33106	0.000124	0.003771
APOBEC2	-1.03543	1.38E-07	4.46E-05	C11orf65	2.121634	0.00017	0.004721
FIBIN	1.543898	1.74E-07	5.24E-05	GNLY	1.063166	0.000247	0.006173
S1PR3	-1.34437	1.94E-07	5.61E-05	MYH6	-1.28107	0.000256	0.006347
CHAC2	-1.44099	2.20E-07	6.03E-05	CXCR4	1.119103	0.000267	0.006541
MID1IP1	-1.47554	3.04E-07	7.32E-05	GRIK2	-1.08904	0.000282	0.006739
ARRDC2	1.51437	3.94E-07	8.52E-05	LPP-AS2	1.241366	0.000296	0.00701
MAMDC2	1.189494	6.33E-07	0.000111	RASL11B	1.622126	0.000301	0.007074
CDKN3	-1.24659	6.70E-07	0.000112	LSAMP	-1.18309	0.000386	0.008282
SLC36A4	-1.14555	7.58E-07	0.000121	PTGDR2	1.502804	0.000433	0.008883
ADRB1	-1.18372	7.78E-07	0.000123	GNMT	-2.1016	0.000781	0.013364
ABCC5	-1.01379	1.16E-06	0.000161	ASPN	1.230578	0.000809	0.013561
RRAD	-1.89416	1.32E-06	0.000172	CFH	1.142017	0.00095	0.015195
LPCAT3	-1.01024	1.39E-06	0.000177	FAM83B	-1.28006	0.001003	0.015753
LTBP2	1.956846	2.25E-06	0.000243	S100A3	-1.54551	0.001037	0.016051
ABRA	-1.68942	3.61E-06	0.000335	GDF10	1.904281	0.001077	0.016473
LMO3	1.35085	5.56E-06	0.000434	HOPX	-2.30755	0.001077	0.016473
RHOBTB1	1.036285	7.02E-06	0.000512	HSD3B2	-1.30633	0.001157	0.0173
SMAP2	1.058667	7.74E-06	0.000545	LYVE1	-1.1385	0.001413	0.019891
MFAP4	1.914116	9.70E-06	0.000642	PIWIL4	1.43009	0.001551	0.021287
ARRDC3	1.15294	1.06E-05	0.00067	APOA1	1.336305	0.00222	0.027336
OGN	1.082544	1.17E-05	0.000724	TMEM63C	-1.54044	0.002254	0.02756
PENK	1.629169	1.17E-05	0.000724	DHRS7C	-2.04034	0.002326	0.028077
E2F8	-1.58732	1.50E-05	0.000869	FREM1	1.029671	0.002638	0.030513
METTL7A	1.011546	1.60E-05	0.000907	IL17RB	-1.62118	0.003207	0.03473
SUSD5	1.423832	1.90E-05	0.001025	ELF3	-1.48394	0.003501	0.036783
MOG	-1.43825	1.93E-05	0.001034	LRRC17	1.34179	0.003816	0.038956
SELE	-2.79966	2.26E-05	0.001163	VNN1	1.286274	0.003894	0.039491

CLEC4E	1.138034	2.38E-05	0.001213	SPC24	-1.21074	0.003952	0.039935
SLC16A9	1.596653	2.55E-05	0.001273	HOOK1	-1.01436	0.004113	0.04087
P2RY13	2.23529	2.60E-05	0.001296	ZNF501	1.310506	0.004157	0.041111
NRK	1.163113	2.75E-05	0.001342	SPINK5	1.522892	0.004197	0.041237
LOC285556	-3.54858	3.30E-05	0.001518	MGST1	-1.08969	0.004198	0.041237
SFRP4	1.287447	3.33E-05	0.001524	IL7R	1.124533	0.005226	0.047566
FKBP5	1.332531	3.50E-05	0.001567	STAT4	1.771234	0.00538	0.048455

Supplement Table 3: Differentially expressed mRNA (DEMs) in GSE84796.

Name	Log2FC	P value	Adjusted P value	Name	Log2FC	P value	Adjusted P value
IL7R	5.635982	3.15E-09	1.62E-06	ABCC5	-1.36661	0.000351	0.008843
CXCR4	3.911759	7.91E-09	3.04E-06	MNS1	1.954456	0.000415	0.009731
TSC22D3	2.292509	2.57E-07	4.98E-05	TMEM63C	-1.61216	0.000426	0.009934
LRRC17	2.473142	3.30E-07	6.12E-05	APOA1	2.391861	0.000444	0.010205
SMAP2	1.966806	4.77E-07	8.15E-05	MARVELD2	-1.10775	0.000456	0.010386
PIWIL4	1.61916	7.36E-07	0.000114	METTL7A	1.543736	0.000488	0.010798
FRZB	2.556612	2.54E-06	0.0003	SLCO5A1	-1.78651	0.000525	0.011287
MYH6	-2.29965	4.15E-06	0.000416	LPCAT3	-1.12465	0.000538	0.011462
GNMT	-2.6273	8.43E-06	0.000708	CFH	1.60233	0.000541	0.011493
CDKN3	-1.15398	8.75E-06	0.000723	HOPX	-1.88386	0.000548	0.01156
E2F8	-2.41694	9.41E-06	0.000755	SLC36A4	-1.21651	0.000555	0.011634
NRK	2.515456	1.13E-05	0.00086	NAP1L3	3.11391	0.000575	0.01187
CDCA2	-2.96466	1.31E-05	0.000958	LSAMP	-2.40812	0.000659	0.012989
PENK	3.323397	1.50E-05	0.001064	FAM179A	-2.52798	0.000811	0.01473
CA14	-2.85132	1.70E-05	0.001185	P2RY13	1.846758	0.000904	0.015929
SLC16A9	2.413273	1.90E-05	0.001277	ABRA	-2.11845	0.000943	0.016386
FIBIN	2.266041	3.14E-05	0.001804	VNN1	2.114643	0.000969	0.016688
DDIT4	2.007328	3.70E-05	0.002059	NR4A3	-2.98413	0.001018	0.01724
ARRDC2	1.484356	5.36E-05	0.002613	GDF10	2.393707	0.001231	0.019109
OMD	2.27277	5.47E-05	0.002648	PIK3R1	1.416809	0.001502	0.021719
LOC285556	-5.35357	5.99E-05	0.002795	GRIK2	-1.38296	0.00151	0.021782
RASL11B	2.578283	6.08E-05	0.002812	APOBEC2	-1.00435	0.001617	0.022744
RRAD	-2.98332	6.37E-05	0.002915	IL17RB	-1.88626	0.001819	0.024658
MFAP4	1.615272	6.83E-05	0.003054	FAM83B	-1.91393	0.001874	0.025182
P2RY2	-1.83146	6.84E-05	0.003054	SELE	-2.72297	0.00188	0.025201
RHOBTB1	1.015542	7.60E-05	0.003271	GNLY	1.471554	0.002006	0.02615
C16orf89	2.428536	9.20E-05	0.003736	FREM1	1.349594	0.002172	0.027431
CHAC2	-1.00983	9.32E-05	0.003766	TUBB2A	-1.02588	0.002176	0.027431
ASPN	2.018348	9.85E-05	0.003906	MRGPRF	-1.23526	0.002232	0.027896
MID1IP1	-1.84265	0.000108	0.00412	PTGDR2	2.17009	0.002319	0.028571
LOC283861	1.491724	0.000111	0.004202	LTBP2	2.268639	0.002363	0.028807
ARRDC3	1.563532	0.000115	0.004301	FKBP5	1.387555	0.002433	0.029425
MOG	-1.89065	0.00013	0.004675	FCN3	-1.25279	0.002434	0.029425
C11orf65	1.254249	0.000133	0.004718	ELF3	-5.24328	0.002483	0.029816
SUSD5	1.394496	0.000147	0.005073	HSD3B2	-1.23709	0.002709	0.031468
ADRB1	-1.14128	0.000151	0.005144	S1PR3	-1.03052	0.003538	0.037325
SPINK5	1.735013	0.000162	0.005393	STAT4	1.526018	0.003578	0.037594
HOOK1	-1.4461	0.000167	0.00549	FAM167B	-1.28167	0.003648	0.038191
SPC24	-1.11409	0.000186	0.005955	MAMDC2	1.150447	0.003689	0.038332

SFRP4	3.059419	0.000192	0.006093	CHRD1	2.075609	0.003945	0.04003
KCNJ5	-1.51961	0.000202	0.006243	MGST1	-1.72341	0.004164	0.041379
OGN	2.542026	0.000213	0.006456	DHRS7C	-3.1977	0.004269	0.041946
ZMAT1	1.446776	0.000251	0.007323	LYVE1	-1.50501	0.004496	0.043411
LMO3	2.402987	0.000252	0.007323	LPP-AS2	1.332697	0.004954	0.046076
CLEC4E	1.838103	0.000309	0.008214	PRRT2	1.132146	0.005399	0.04848
ZNF501	1.535873	0.000324	0.008472	S100A3	-2.12417	0.005435	0.04874
