

Figure S1. Length distribution of microRNAs (miRNAs) reads from immature dendritic cells (iDCs) and IL-27-treated iDCs (27DCs). Different colors represent different samples.

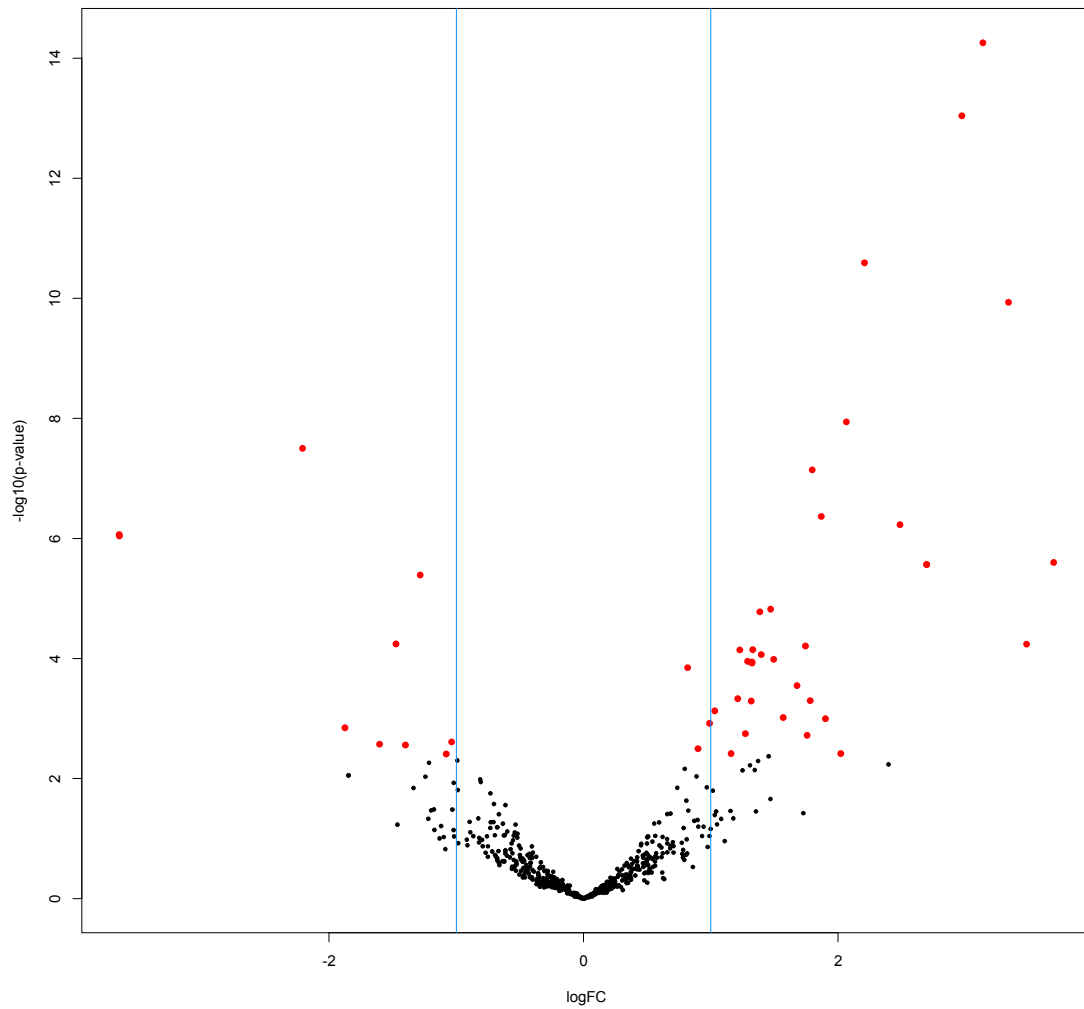


Figure S2. Volcano plot of known MicroRNAs (miRNAs) profiles. The x-axis shows the log₂fold-change of IL-27-treated iDCs (27DCs) vs. immature dendritic cells (iDCs), while the y-axis shows the $-\log_{10}$ P-value of miRNA. The red point in the plot represents the differentially expressed miRNAs with statistical significance. The vertical lines correspond to a two-fold change in expression (up or down).

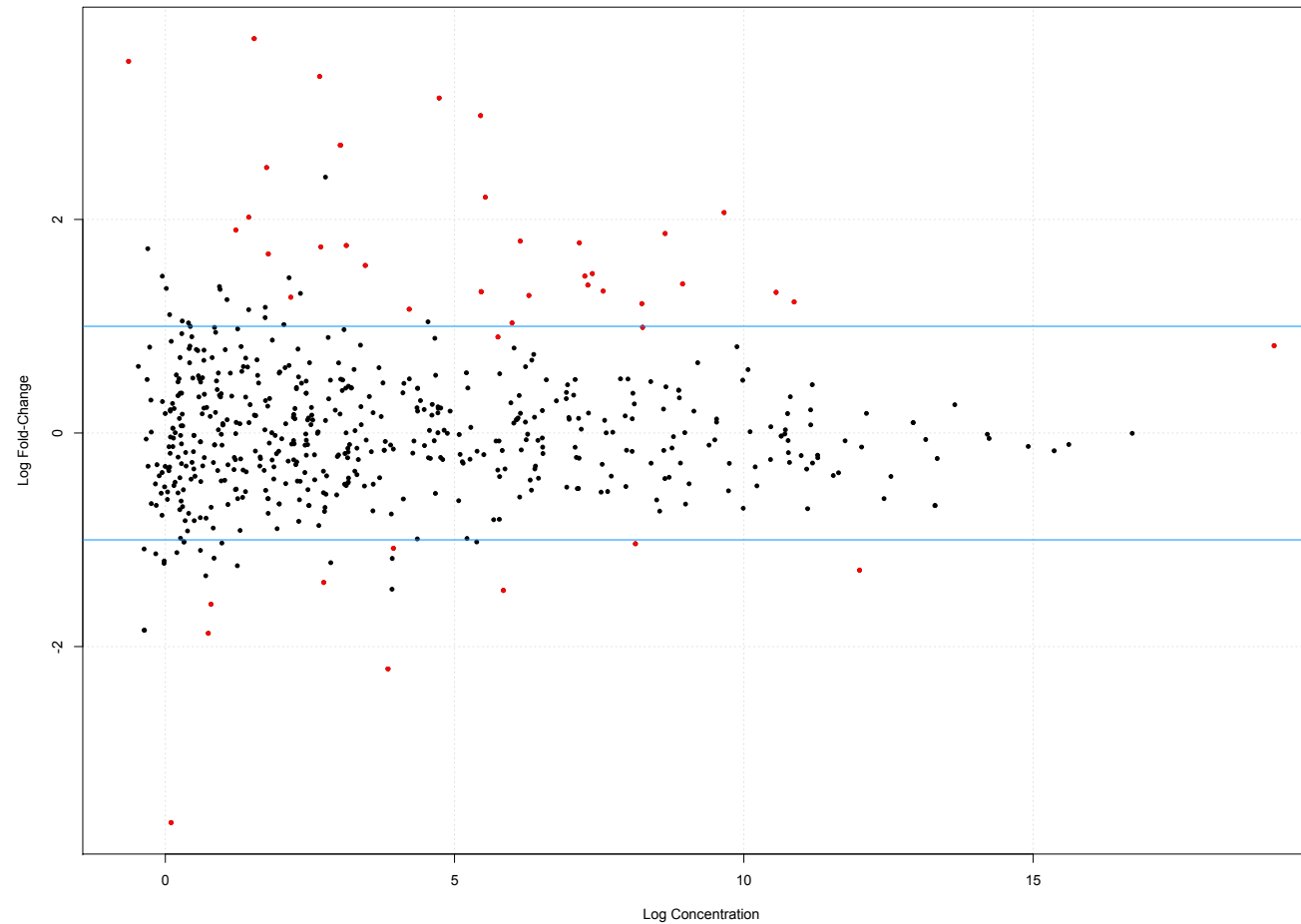
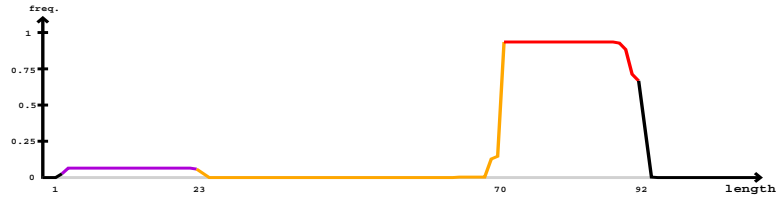
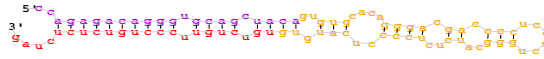


Figure S3. M-A plot. The MA plot shows for each microRNA (miRNA) (dot) the difference in expression levels between immature dendritic cells (iDCs) and IL-27-treated iDCs (27DCs) (M, log₂ fold change; y axis) compared to their mean expression level (A, log₂ transformed normalized miRNA read count; x axis). Blue line indicates twofold difference in expression.

A.

Provisional ID	: chr10_2389
Score total	: 195.8
Score for star read(s)	: 3.9
Score for read counts	: 189.3
Score for mfe	: 1.7
Score for randfold	: 1.6
Score for cons. seed	: -0.6
Total read count	: 383
Mature read count	: 358
Loop read count	: 0
Star read count	: 25

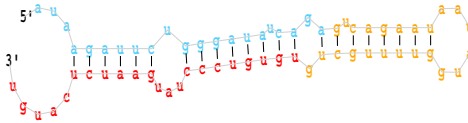
[illegible]

QXBT1

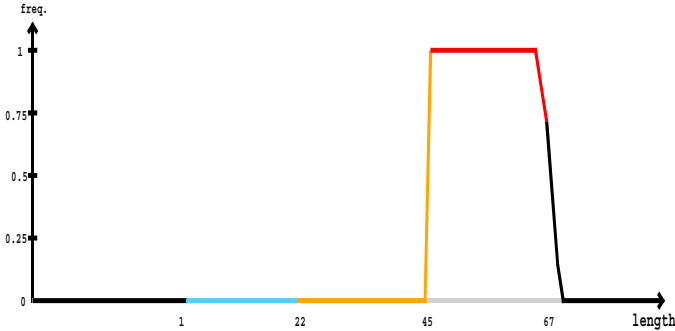
chr10:48966435..48966526:+

B.

Provisional ID	: chr2_7214
Score total	: 1.1
Score for star read(s)	: -1.3
Score for read counts	: -2.3
Score for mfe	: 0.2
Score for randfold	: 1.6
Score for cons. seed	: 3
Total read count	: 7
Mature read count	: 7
Loop read count	: 0
Star read count	: 0



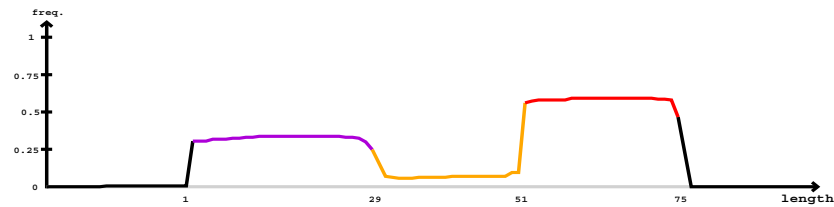
QXBT2
chr2:94772066..94772132:-



Star		Mature				
5'-	auugcawuuugcucugugauaagac	uaagaauucugggaucagagucagagaaauaauugguuugcuguguguccuauagaaucaucuguggaauuguaauccuuaauug	-3'	exp		
	(((((.....)))))).....(((.....(((.....(((.....(((.....)))))))).)))))).....(((.....)))).....	reads	mm		sample	
	.....uuguguccuauagaaucaucaug.....	1	0		iD4	
	.....uuguguccuauagaaucaucaug.....	1	0		iD4	
	.....uuguguccuauagaaucaucaug.....	4	0		iD4	
	.....uuguguccuauagaaucaucaugugf.....	1	1		iD4	

C.

Provisional ID	: chr9_19385
Score total	: 1.4
Score for star read(s)	: -1.3
Score for read counts	: 0
Score for mfe	: 1.7
Score for randfold	: 1.6
Score for cons. seed	: -0.6
Total read count	: 155
Mature read count	: 92
Loop read count	: 10
Star read count	: 53

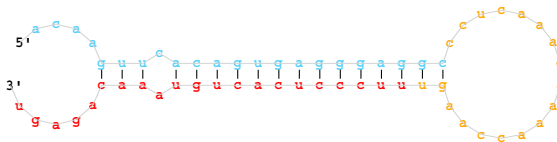
[illegible]

QXBT3

chr9:40297854..40297928:+

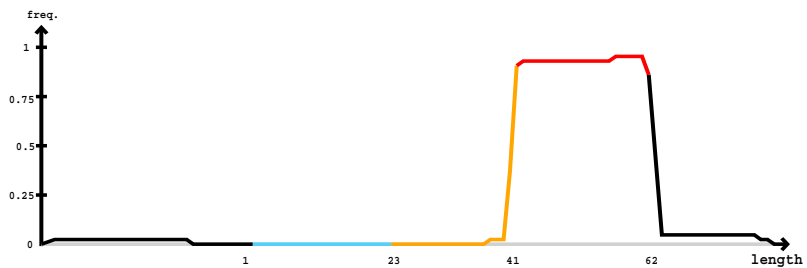
D.

Provisional ID	: chr16_4548
Score total	: 0.9
Score for star read(s)	: -1.3
Score for star counts	: 0
Score for mfe	: 1.2
Score for randfold	: 1.6
Score for cons. seed	: -0.6
Total read count	: 39
Mature read count	: 39
Loop read count	: 0
Star read count	: 0



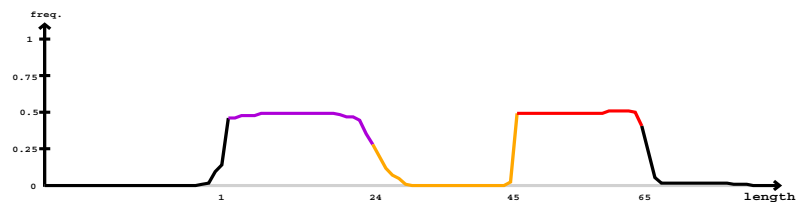
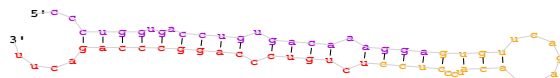
QXBT4

chr16:21647236..21647297:-

[illegible]

E.

Provisional ID	: chr4_10978
Score total	: 65.1
Score for star read(s)	: 3.9
Score for read counts	: 56.7
Score for mfe	: 0
Score for randfold	: 1.6
Score for cons. seed	: 3
Total read count	: 123
Mature read count	: 63
Loop read count	: 0
Star read count	: 60



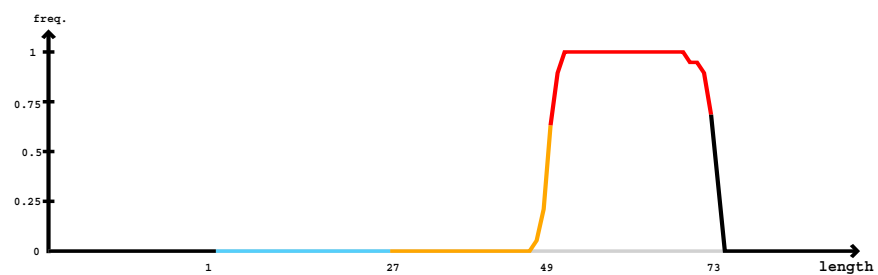
QXBT5

chr4:77048486..77048550:-

	Star	Mature			
5'	uuuugucuaacgcccuccaagcacaacccuggugacccugugacaaaggaguguuacaguuacaucuccuccucugucccaggccacagucuccaaggacaacagcaagc		-3'	obs	
	uuuugucuaacgcccuccaagcacaacccuggugacccugugacaaaggaguguuacaguuacaucuccuccucugucccaggccacagucuccaaggacaacagcaagc		exp		
	...(((((.....(((.....(((.....(((.....))).....))).....))).....))).....))).....))).....))).....))).....))).....		reads	nm	sample
	.....cacaccugugacccugugag.....		1	0	1D2
	.....cacaccugugacccugugag.....		1	0	1D2
	.....cacccugugacccugugacaa.....		2	0	1D2
	.....cacccugugacccugugacaaag.....		7	0	1D2
	.....cacccugugacccugugacaaagA.....		1	1	1D2
	.....cacccugugacccugugag.....		1	0	1D2
	.....cacccugugacccugugacaaag.....		2	0	1D2
	.....cacccugugacccugugacaaagU.....		1	1	1D2
	.....cacccugugacccugugacaaagga.....		1	0	1D2
	.....cacccugugacccugugacaaaggagu.....		1	0	1D2
	.....ccucugugacccugugacaa.....		1	0	1D2
	.....ccucugugacccugugacaaag.....		3	0	1D2
	.....ccucugugacccugugacaaagg.....		7	0	1D2
	.....Uccucugugacccugugacaaagga.....		1	1	1D2
	.....ccucugugacccugugacaaaggU.....		1	1	1D2
	.....ccucugugacccugugacaaagga.....		13	0	1D2
	.....ccucugugacccugugacaaaggd.....		2	1	1D2
	.....ccucugugacccugugacaaaggag.....		2	0	1D2
	.....ccucugugacccugugacaaaggga.....		1	1	1D2
	.....ccucugugacccugugacaaaggagu.....		2	0	1D2
	.....ccucugugacccugugacaaaggagU.....		1	1	1D2
	.....ccucugugacccugugacaaaggagug.....		1	0	1D2
	.....ccucugugacccugugacaaaggagugU.....		4	0	1D2
	.....ccucugugacccugugacaaaggagugG.....		1	1	1D2
	.....ccucugugacccugugacaaaggagugU.....		1	1	1D2
	.....cugugacccugugacaaaggagu.....		1	1	1D2
	.....cugugacccugugacaaaggagu.....		1	0	1D2
	.....cugugacccugugacaaaggagug.....		2	0	1D2
	.....cucugucccaggcccacagacU.....		1	1	1D2
	.....cucugucccaggcccacagacuu.....		2	0	1D2
	.....ucugucccaggcccacagac.....		1	0	1D2
	.....ucugucccaggcccacagacU.....		11	0	1D2
	.....ucugucccaggcccacagacC.....		1	1	1D2

F.

Provisional ID	: chr3_8327
Score total	: 1.9
Score for star read(s)	: -1.3
Score for read counts	: 0
Score for mfe	: 2.2
Score for randfold	: 1.6
Score for cons. seed	: -0.6
Total read count	: 19
Mature read count	: 19
Loop read count	: 0
Star read count	: 0



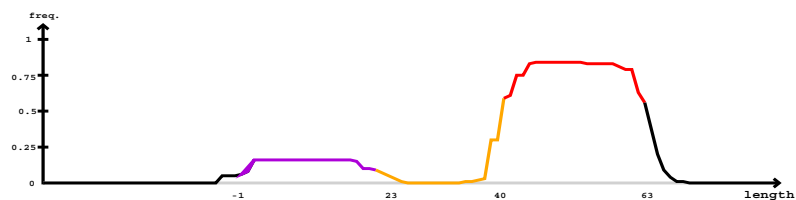
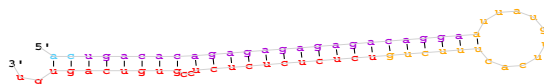
QXBT6

chr3:52523356..52523428:+

[illegible]

G.

Provisional ID	: chr10_1977
Score total	: 6.1
Score for star read(s)	: -1.3
Score for read counts	: 0
Score for mfe	: 2.8
Score for randfold	: 1.6
Score for cons. seed	: 3
Total read count	: 91
Mature read count	: 80
Loop read count	: 0
Star read count	: 11



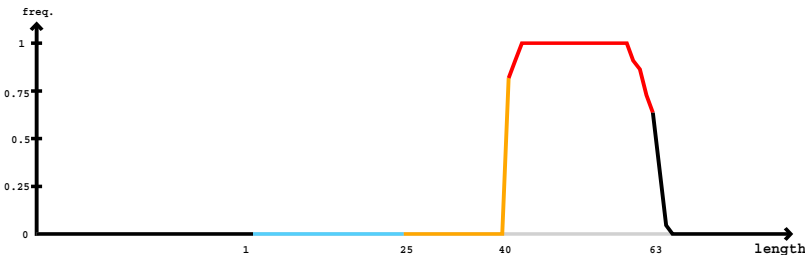
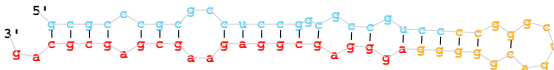
QXBT7

chr10:48827482..48827544:+

[illegible]

H.

Provisional ID	: chr15_4958
Score total	: 1.6
Score for star read(s)	: -1.3
Score for read counts	: 0
Score for mfe	: 2.1
Score for randfold	: -2.2
Score for cons. seed	: 3
Total read count	: 22
Mature read count	: 22
Loop read count	: 0
Star read count	: 0



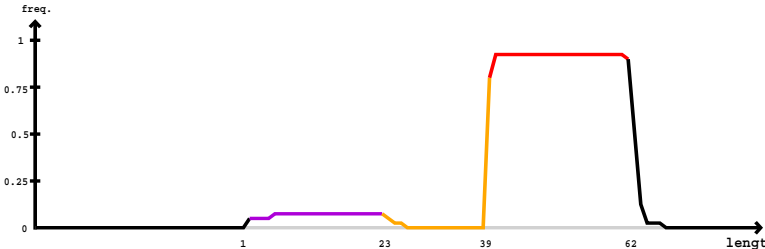
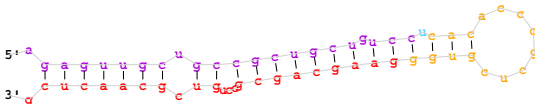
QXBT8

chr15:45167265..45167327:-

[illegible]

I.

Provisional ID	: chr17_8017
Score total	: 1.5
Score for star read(s)	: -1.3
Score for read counts	: 0
Score for mfe	: 2
Score for ransfold	: -2.2
Score for cons. seed	: 3
Total read count	: 40
Mature read count	: 37
Loop read count	: 0
Star read count	: 3

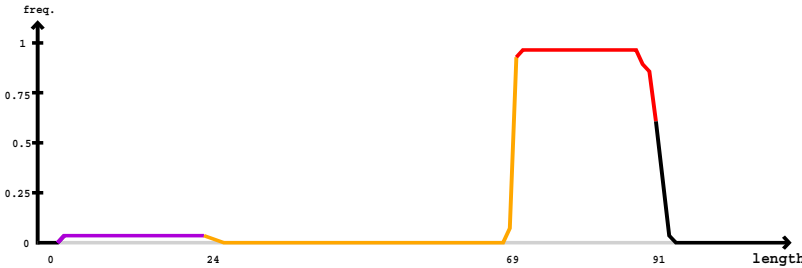
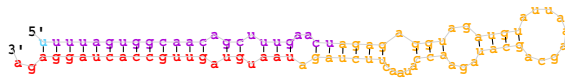


QXBT9
chr17:78140754..78140815:+

[illegible]

J.

Provisional ID	: chr1_171
Score total	: 12.4
Score for star read(s)	: 3.9
Score for read counts	: 8.3
Score for mfe	: -0.7
Score for randfold	: 1.6
Score for cons. seed	: -0.6
Total read count	: 28
Mature read count	: 27
Loop read count	: 0
Star read count	: 1

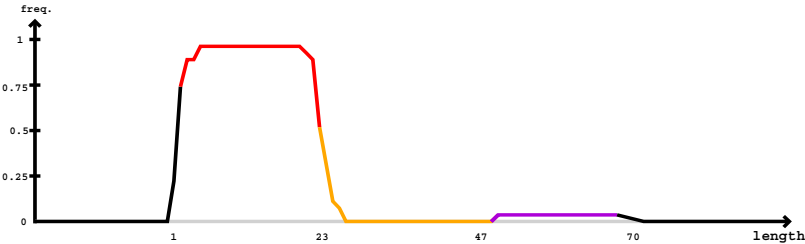
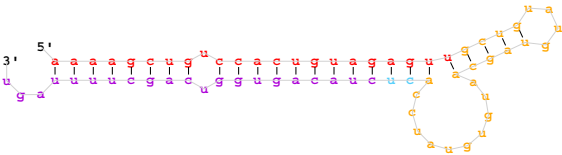


QXBT10
chr1:19910424..19910514:+

[illegible]

K.

Provisional ID : chr9_16125
Score total : 5.8
Score for star read(s) : -1.3
Score for read counts : 0
Score for mfe : 2.5
Score for randfold : 1.6
Score for cons. seed : 3
Total read count : 27
Mature read count : 26
Loop read count : 0
Star read count : 1

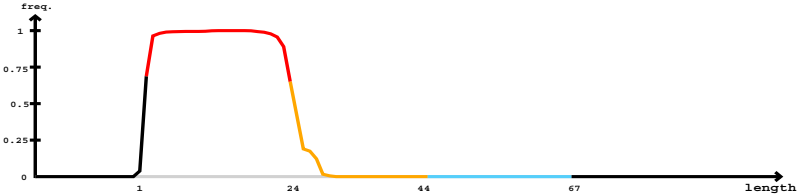


QXBT11
chr9:32456301..32456370:-

Mature		Star					
5'						-3'	obs
ccauuuuuugcuuacuacuaaaagcuguccacuguaagaguugcuguuagucaauguguauccacucacagugucagcucuuaagagagagcuaaaaaugauaaaaa							exp
ccauuuuuugcuuacuacuaaaagcuguccacuguaagaguugcuguuagucaauguguauccacucacagugucagcucuuaagagagagcuaaaaaugauaaaaa							
.((
.....uaaaGgcuguccacuguaagagu.....							reads
.....uaaaagcuguccacuguaagagu.....							mm
.....uGaaagcuguccacuguaagagu.....							sample
.....uaaaagcuguccacuguaagagC.....							
.....aaaagcuguccacuguaagag.....							
.....aaaagcuguccacuguaagagu.....							
.....aaaGgcuguccacuguaagagu.....							
.....aaaagcuguccacuguaagagC.....							
.....aaaGgcuguccacuguaagagu.....							
.....aaaagcuguccacuguaagaguG.....							
.....aaaagcuguccacuguaagagu.....							
.....aGagcuguccacuguaaga.....							
.....aaagcuguccacuguaagagu.....							
.....aaagcuguccacuguaagaguG.....							
.....agcuguccacuguaagaguG.....							
.....agcuguccacuguaagaguG.....							
.....cuacGgugguagcucuuaagu.....							

L.

Provisional ID	: chr4_12297
Score total	: 0.4
Score for star read(s)	: -1.3
Score for read counts	: 0
Score for mfe	: 0.9
Score for randfold	: -2.2
Score for cons. seed	: 3
Total read count	: 31071
Mature read count	: 31071
Loop read count	: 0
Star read count	: 0



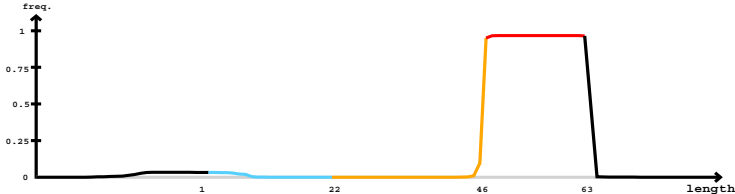
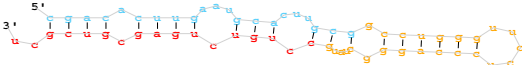
QXBT12

chr4:165400665..165400731:-

[illegible]

M.

Provisional ID	: chr14_3835
Score total	: 0
Score for star read(s)	: -1.3
Score for read counts	: 0
Score for mfe	: 0.5
Score for randfold	: -2.2
Score for cons. seed	: 3
Total read count	: 124795
Mature read count	: 124795
Loop read count	: 0
Star read count	: 0



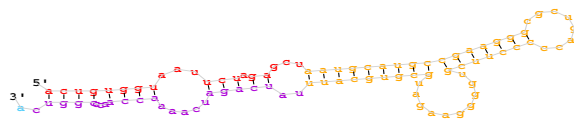
QXBT13

chr14:16057563..16057625:+

[illegible]

N.

Provisional ID	: chr22_9127
Score total	: 19694.9
Score for star read(s)	: 3.9
Score for read counts	: 19693.7
Score for mfe	: 0.2
Score for randfold	: -2.2
Score for cons. seed	: -0.6
Total read count	: 38640
Mature read count	: 38019
Loop read count	: 7
Star read count	: 614

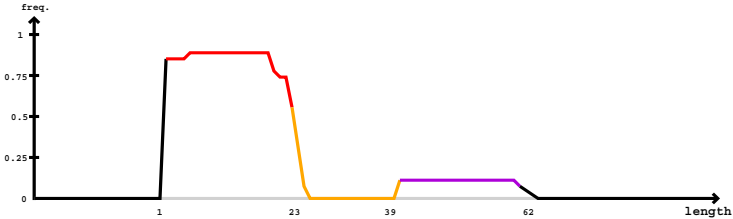
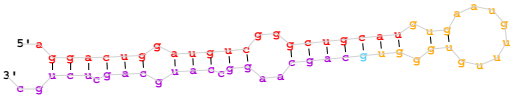
[illegible]

QXBT14

chr22:11629695..11629789:+

O.

Provisional ID : chr4_26072
Score total : 18.3
Score for star read(s) : 3.9
Score for read counts : 7.8
Score for mfe : 2
Score for randfold : 1.6
Score for cons. seed : 3
Total read count : 27
Mature read count : 24
Loop read count : 0
Star read count : 3

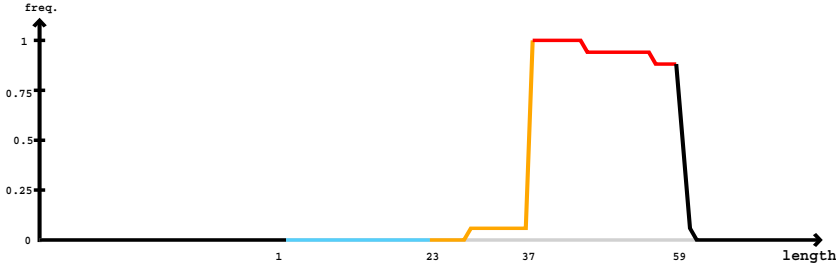
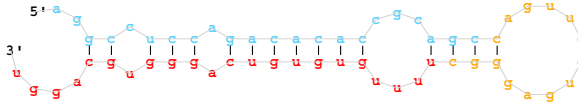


QXBT15
chr4:141707992..141708053:+

Mature		Star					
5' -	uggagaggcagagcugcugcaggacuggaugucgggcugcagugaauguuuguggugcagcaaggccaugcagcucugcaguggccuuucaugggagguagucacau	-3'	obs				
	uggagaggcagagcugcugcaggacuggaugucgggcugcagugaauguuuguggugcagcaaggccaugcagcucugcaguggccuuucaugggagguagucacau		exp				
	..(((((((.....(((((((((((.....(((((((((((.....(((((((((((.....(((((((((((.....(((((((((((.....(((((((((((.....		reads	mm	sample		
	.....aggacuggaugucgggcugcau.....		2	0	DC2		
	.....aggacuggaugucgggcugcau.....		1	1	DC2		
	.....aggacuggaugucgggcugcau.....		2	0	DC4		
	.....aggacuggaugucgggcugcau.....		1	1	DC4		
	.....aggacuggaugucgggcugcau.....		1	1	DC4		
	.....aggacuggaugucgggcugcau.....		1	1	DC4		
	.....aggacuggaugucgggcugcau.....		2	0	DC4		
	.....aggacuggaugucgggcugcau.....		5	0	DC4		
	.....aggacuggaugucgggcugcau.....		1	1	DC4		
	.....aggacuggaugucgggcugcau.....		1	1	DC4		
	.....aggacuggaugucgggcugcau.....		1	1	DC4		
	.....aggacuggaugucgggcugcau.....		1	1	DC4		
	.....aggacuggaugucgggcugcau.....		1	1	DC4		
	.....aggacuggaugucgggcugcau.....		1	0	DC4		
	.....aggacuggaugucgggcugcau.....		1	1	DC4		
	.....aggacuggaugucgggcugcau.....		1	0	DC7		
	.....aggacuggaugucgggcugcau.....		1	0	DC7		
	.....aggacuggaugucgggcugcau.....		1	1	DC7		
	.....aggacuggaugucgggcugcau.....		1	1	ID7		
	.....aggacuggaugucgggcugcau.....		1	1	ID2		
	.....aggacuggaugucgggcugcau.....		1	0	ID2		

P.

Provisional ID	:	chr14_10595
Score total	:	5.3
Score for star read(s)	:	-1.3
Score for read counts	:	0
Score for mfe	:	2
Score for randfold	:	1.6
Score for cons. seed	:	3
Total read count	:	16
Mature read count	:	16
Loop read count	:	0
Star read count	:	0



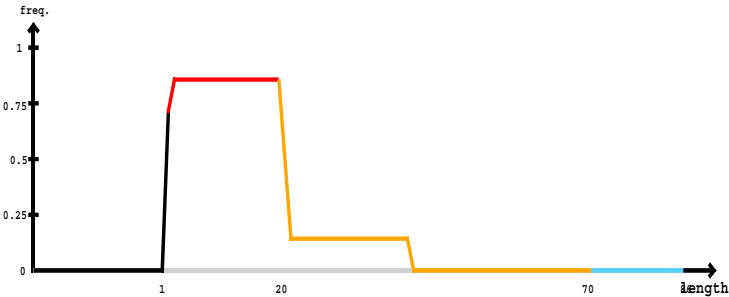
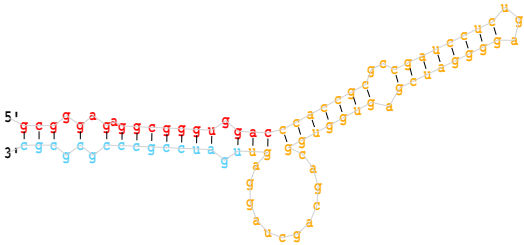
QXBT16

chr14:94113640..94113698:+

[illegible]

Q.

Provisional ID : chr2_19753
Score total : 3.1
Score for star read(s) : -1.3
Score for read counts : -2.3
Score for mfe : 2.2
Score for randfold : 1.6
Score for cons. seed : 3
Total read count : 7
Mature read count : 6
Loop read count : 1
Star read count : 0

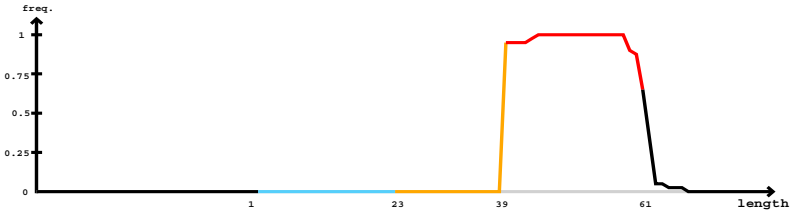


QXBT17
chr2:136117376..136117461:-

Mature		Star				
5'-	ccccagcacuagagcagaggcgaggagggcgguugacccacccgcgcgaucucucugaggggaucgagugggcagcagcuaggaguu	gaucgcgcgcgcguuuug	-3'	exp		
.....	((((((((.....(((.....(((.....(((.....)))))).....)))))).....)))))).....))))))		reads	mm	sample	
.....	gcgggagagggcgguugac.....		2	0	DC2	
.....	gcgggagagggcgguugaU.....		1	1	DC4	
.....	gcgggagagggcgguugac.....		2	0	DC4	
.....	.....caccgcgcgcgaucucucugag.....		1	0	ID7	
.....	.....cgaggagggcgguugaG.....		1	1	ID2	

R.

Provisional ID	: chrX_38905
Score total	: 2.1
Score for star read(s)	: -1.3
Score for read counts	: 0
Score for mfe	: 2.4
Score for randfold	: 1.6
Score for cons. seed	: -0.6
Total read count	: 39
Mature read count	: 39
Loop read count	: 0
Star read count	: 0



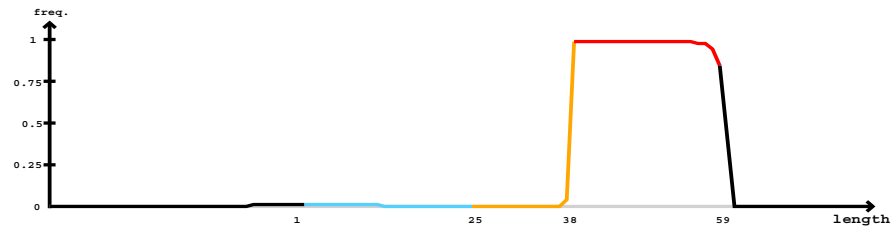
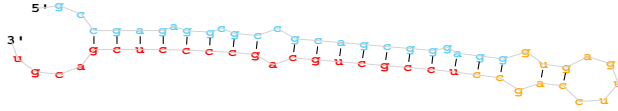
QXBT18

chrX:129790441..129790501:+

	Star	Mature			
5'-	gcctgggagcauuagaaccugaaucuccuggcgcugaguuacacagcaggaggaguaaguaaacccugggcucuacucucucauuuguaaaacucaggccaacaauaaccauuaccu	-3'	exp		
	reads	mm			sample
.....(((f(f(.....))..)))((((((((((((((((((((((((((.....((...))..))	1	0			DC2
.....acuccucauuuguaaaacucagg.....	1	0			
.....acuccucauuuguaaaacucagg.....	2	0			DC7
.....acuccucauuuguaaaacucagg.....	1	0			DC7
.....acuccucauuuguaaaacuc.....	3	0			DC4
.....acuccucauuuguaaaacucaggC.....	1	1			DC4
.....acuccucauuuguaaaacucagg.....	1	0			DC4
.....acuccucauuuguaaaacucaggA.....	1	1			DC4
.....acuccucauuuguaaaacuf.....	1	1			iD7
.....acuccucauuuguaaaacuca.....	1	0			iD7
.....acuccucauuuguaaaacucagg.....	2	0			iD7
.....acuccucauuuguaaaacucagg.....	9	0			iD7
.....acuccucauuuguGaaaacucagg.....	1	1			iD7
.....acuccucauuuguaaaacucagfu.....	1	1			iD7
.....ucacuuuguaaaacucaggcca.....	1	0			iD7
.....ucuuuguaaaacucaggccaafA.....	1	1			iD7
.....acuccCcauuuguaaaacucagg.....	1	1			iD2
.....acuccucauuuguaaaacucagg.....	2	0			iD2
.....acuccucauuuguaaaacucaggA.....	1	1			iD2
.....acuccucauuuguaaaacucagg.....	3	0			iD2
.....acuccucauuuguaaaacucagg.....	1	0			iD4
.....acuccucauuuguaaaacuca.....	1	1			iD4
.....acuccucauuuguaaaacucagg.....	1	0			iD4
.....acuccucauuuguaaaacucagfu.....	2	1			iD4
.....acucccfAuuuuguaaaacucagg.....	1	1			iD4

S.

Provisional ID	:	chr8_12884
Score total	:	2.1
Score for star read(s)	:	-1.3
Score for read counts	:	0
Score for mfe	:	2.4
Score for randfold	:	1.6
Score for cons. seed	:	-0.6
Total read count	:	171
Mature read count	:	171
Loop read count	:	0
Star read count	:	0



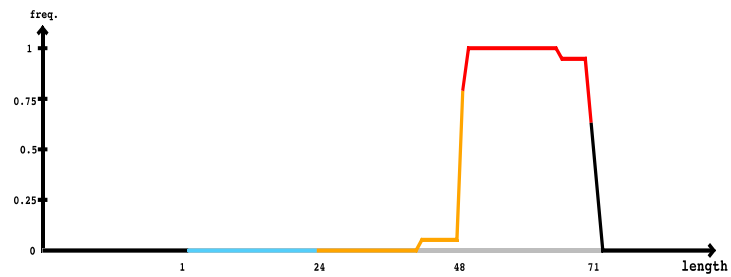
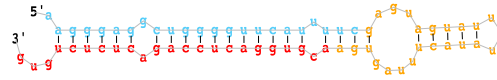
QXBT19

chr8:55880664..55880722:-

[illegible]

T.

Provisional ID	: chr17_7803
Score total	: 1.3
Score for star read(s)	: -1.3
Score for read counts	: 0
Score for mfe	: 1.6
Score for randfold	: 1.6
Score for cons. seed	: -0.6
Total read count	: 18
Mature read count	: 18
Loop read count	: 0
Star read count	: 0

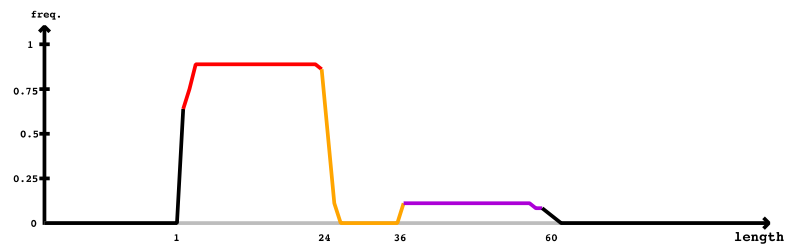
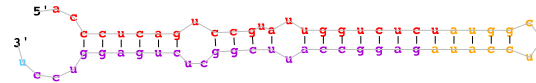


QXBT20
chr17:42311190..42311260:+

[illegible]

U.

Provisional ID	: chr17_5067
Score total	: 22.9
Score for star read(s)	: 3.9
Score for read counts	: 12.4
Score for mfe	: 2
Score for randfold	: 1.6
Score for cons. seed	: 3
Total read count	: 36
Mature read count	: 32
Loop read count	: 0
Star read count	: 4



QXBT21
chr17:7306830..7306888:-

[illegible]

V.

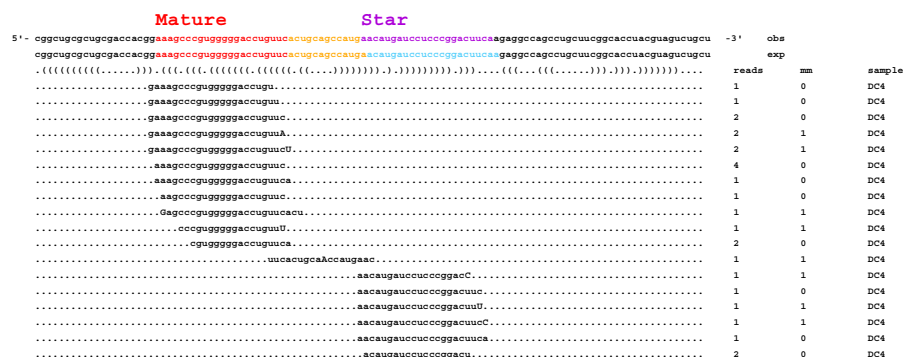
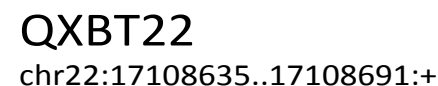


Figure S4. Twenty-two novel miRNA structures and reads mapping graphs (A-V) from a miRDeep2 analysis. For each novel miRNA graph, the upper left table gives the miRDeep2 score break-down for the reported miRNA. The upper right figure shows the predicted miRNA hairpin structure. The middle density plot shows the distribution of reads in the predicted precursor sequence. The sequences below indicate reads align to the precursor with the positions of the mature, loop and star strand. The red color denotes the mature sequence; the yellow color denotes the loop sequence and the purple color denotes the star sequence.

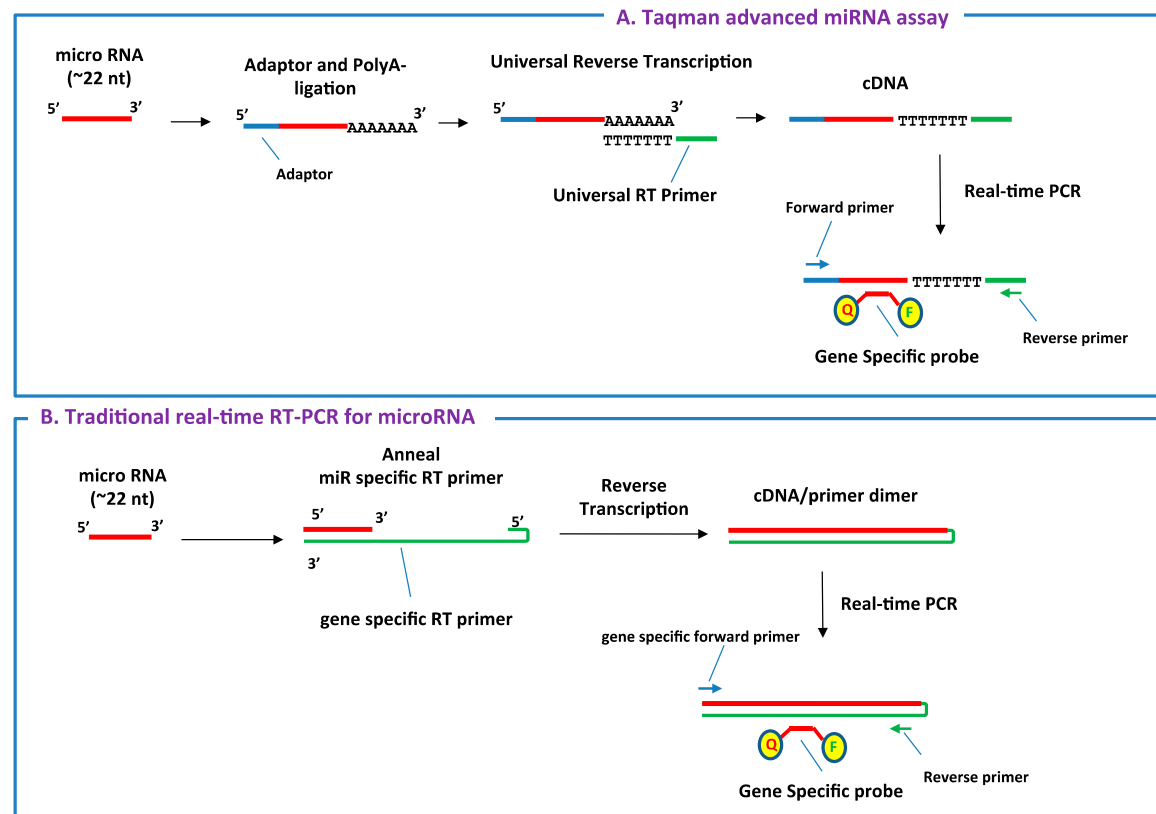


Figure S5. The schematic diagram for advanced and traditional microRNA (miRNA) qPCR assays. **(A)** In the advanced miRNA assay, the universal RT primer (containing poly(T)) binds to the polyA tail to synthesize cDNA. **(B)** In the traditional miRNA assay, the miR specific RT primer binds to miRNA to form cDNA/primer dimer.

Table S1. Summary of sequenced immature dendritic cells (iDCs) and IL-27-treated iDCs (27DCs) small RNA library.

Sample ID	Yield (M bases)	Number of raw reads	Number of clean reads	Percentage of clean reads (%)	Number of mapped reads	Percentage of mapped reads (%)
iDC_2	2968	58182414	24040126	41.32	23200067	96.51
iDC_4	2918	57207937	27830481	48.65	27209972	97.77
iDC_7	3503	68673789	34474974	50.20	33435206	96.98
27DC_2	2513	49259191	21794678	44.24	21211384	97.32
27DC_4	2624	51456830	27426267	53.30	26484335	96.57
27DC_7	3224	63214830	24401275	38.60	23652580	96.93