SUPPLEMENTARY DATA

Table S1. Top-ranking nucleolar miRNAs present in HeLa and MCF7 NCode arrays.

Table S2. Frequency of miRNA reads in the subcellular compartments.

Figure S1. Scatter plot analyses of miRNA reads in the cellular compartments. (**A**) Total cellular reads compared to cytoplasmic reads. (**B**) Nuclear reads compared to cytoplasmic reads. (**C**) Nucleolar reads compared to nuclear reads. (**D**) Nucleolar reads compared to cytoplasmic reads. Read cut-offs; A and B ≥ 50 reads, C and D nucleolar reads ≥ 5. Pearson correlation coefficiences are indicated (*r*).

Figure S2. MiR-21 and miR-31 expression in subcellular compartments in Dicer-proficient and deficient cells. RNA was isolated from subcellular compartments of HCT116 wild –type and HCT116 Dicer -/- cells. RNA (25 µg) was separated on 15% gel and probed by Northern hybridization using miR-21 and miR-31 LNA probes. The respective mature and precursor forms are shown. hY1 was used as a control for cellular fractionation. Relative abudancies of miRNAs ares expressed as compared to total cellular RNA in each cell line set as 1.

Supplementary Table S1. Top-ranking nucleolar miRNAs present in HeLa and MCF7 NCode arrays.

MCF7			HeLa		
microRNA	Nucleolar intensity	Cellular intensity	microRNA	Nucleolar intensity	Cellular intensity
hsa-let-7a	7.9	15.5	hsa-let-7a	9.3	15.3
hsa-let-7b	7.4	14.0	hsa-let-7b	8.8	14.0
hsa-let-7c	7.5	14.0	hsa-let-7c	8.9	14.4
hsa-let-7d	7.2	14.4	hsa-let-7d	7.9	13.3
hsa-let-7e	6.7	13.6	hsa-let-7f	8.7	14.9
hsa-let-7f	7.2	14.5	hsa-let-7g	8.5	14.5
hsa-let-7g	6.7	12.7	hsa-let-7i	9.2	15.4
hsa-let-7i	7.7	14.4	hsa-miR-100	8.0	13.2
hsa-miR-100	6.3	6.8	hsa-miR-103	8.4	13.6
hsa-miR-103	7.4	14.5	hsa-miR-106a	9.1	15.3
hsa-miR-106a	7.2	11.9	hsa-miR-106b	8.3	13.8
hsa-miR-106b	7.1	14.0	hsa-miR-107	8.5	13.8
hsa-miR-107	7.2	14.2	hsa-miR-125a	8.0	12.5
hsa-miR-125b	7.1	10.2	hsa-miR-125b	8.7	13.7
hsa-miR-15a	6.2	12.5	hsa-miR-15a	7.9	13.2
hsa-miR-15b	6.9	13.7	hsa-miR-15b	8.5	14.1
hsa-miR-16	7.7	14.3	hsa-miR-16	9.4	15.4
hsa-miR-17	6.7	11.4	hsa-miR-17	8.7	14.6
hsa-miR-182	6.1	12.9	hsa-miR-181b	8.0	13.1
hsa-miR-191	7.4	14.4	hsa-miR-188	7.9	10.8
hsa-miR-19b	6.8	11.5	hsa-miR-18a	7.9	13.6
hsa-miR-200b	6.4	13.6	hsa-miR-19a	8.0	14.1
hsa-miR-200c	7.1	14.7	hsa-miR-19b	8.8	14.9
hsa-miR-20a	7.2	11.2	hsa-miR-20a	9.2	15.5
hsa-miR-20b	6.4	9.9	hsa-miR-20b	8.5	14.3
hsa-miR-21	7.8	15.1	hsa-miR-21	9.8	15.9
hsa-miR-22	6.3	12.7	hsa-miR-22	8.2	13.6
hsa-miR-23a	9.0	14.0	hsa-miR-221	7.9	12.7
hsa-miR-23b	8.1	13.3	hsa-miR-224	8.0	13.6
hsa-miR-24	8.3	14.4	hsa-miR-23a	10.5	16.6
hsa-miR-25	7.0	13.8	hsa-miR-23b	9.9	16.0
hsa-miR-26a	6.7	12.5	hsa-miR-24	10.1	16.4
hsa-miR-27a	6.8	11.2	hsa-miR-25	8.6	14.3
hsa-miR-27b	6.4	12.5	hsa-miR-26a	8.2	13.6
hsa-miR-29a	6.5	10.8	hsa-miR-27a	9.4	15.6
hsa-miR-30a	6.1	9.0	hsa-miR-27b	8.2	13.6
hsa-miR-30c	6.6	11.0	hsa-miR-29a	8.6	14.5
hsa-miR-30d	6.6	12.9	hsa-miR-30a	8.3	13.5
hsa-miR-320	6.8	12.9	hsa-miR-30c	8.2	13.0
hsa-miR-342	6.4	13.6	hsa-miR-30d	8.2	13.4
hsa-miR-425	6.3	13.0	hsa-miR-320	8.5	13.9
hsa-miR-494	6.8	12.6	hsa-miR-324	8.5	11.5
hsa-miR-594	6.6	10.7	hsa-miR-372	8.0	11.8
hsa-miR-93	7.1	14.2	hsa-miR-594	8.5	12.3
hsa-miR-99a	6.2	8.5	hsa-miR-92	8.4	13.4
hsa-miR-99b	6.1	12.2	hsa-miR-93	8.6	14.1

Supplementary Table S2. MiRNA reads in the subcellular fractions.

	Nucleolus		Cytoplasm		Nuclear		Cellular
MIR24	972	MIR21	120398	MIR21	118190	MIR21	101664
MIR21	691	MIR24	18051	MIR24	34499	MIR24	20998
MIR93	113	MIR23A	16701	MIR23A	5097	MIR23A	18631
MIR31	49	MIRLET7A	4622	MIR92A	4593	MIRLET7A	4065
MIR1307	38	MIR27A	2868	MIR103A	2775	MIR17	2873
MIR19B	34	MIR99A	2422	MIR17	2626	MIR92A	2573
MIR574	24	MIR17	2240	MIR18A	2463	MIR27A	2328
MIR151	19	MIR92A	1930	MIR27A	2093	MIR18A	2283
MIR532	17	MIR18A	1436	MIR99A	1782	MIR103A	2157
MIR148	15	MIRLET7B	1422	MIR30C	1624	MIR99A	2042
MIR18A	12	MIR15B	1416	MIR15B	1283	MIR93	1535
MIR425	7	MIRLET7F	1240	MIRLET7F	1248	MIR15B	1454
MIR191	6	MIR100	1145	MIR93	1241	MIR30C	1305
MIR181A2	5	MIR93	1072	MIRLET7A	1112	MIR100	1269
MIR19A	5	MIRLET7I	1043	MIR19B	1075	MIRLET7B	1234
MIR30C	5	MIR103A	1042	MIR125B	1035	MIR20A	1169
MIR128-1	4	MIR30A	967	MIR100	1010	MIR23B	1139
MIR149	4	MIR30C	967	MIR19A	711	MIR19B	994
MIR320A	4	MIR125B	908	MIR106B	694	MIRLET7F	962
MIR452	4	MIR20A	852	MIR151	657	MIRLET7I	756
MIR484	4	MIR23B	806	MIR30A	649	MIR125B	727
MIR125A	3	MIR19B	727	MIR16	603	MIR30A	634
MIR15B	3	MIRLET7C	582	MIR23B	581	MIR29B	627
MIR17	3	MIR16	560	MIR20A	549	MIR151	618
MIR424	3	MIR26A	553	MIR30B	538	MIR106B	596
MIR96	3	MIR106B	550	MIR107	516	MIR320A	557
MIR100	2	MIR19A	522	MIR191	426	MIR30B	518
MIR103A1	2	MIR30B	506	MIR10A	424	MIR224	465
MIR106B	2	MIRLET7D	492	MIR320A	395	MIR31	456
MIR1272	2	MIRLET7G	473	MIR31	377	MIR196A	443
MIR128-2	2	MIR320A	402	MIR196A	343	MIR191	428
MIR152	2	MIR151	398	MIR338	341	MIR16	401
MIR16-2	2	MIR224	385	MIR27B	338	MIR26A	401
MIR182	2	MIR10A	349	MIRLET7B	329	MIRLET7G	367
MIR183	2	MIR27B	328	MIRLET7I	327	MIR19A	356
MIR188	2	MIR196A	306	MIR29B	316	MIR27B	352
MIR222	2	MIR34A	289	MIR425	295	MIR181A	326
MIR338	2	MIR338	256	MIR193B	281	MIR107	322
MIR342	2	MIR31	243	MIR181A	280	MIR181B	315
MIR542	2	MIR191	239	MIR301A	271	MIRLET7D	313
MIR92A2	2	MIR181B	236	MIR224	252	MIR425	293
MIRLET7A	2	MIRLET7E	212	MIR484	235	MIRLET7C	292
MIR30B	1	MIR425	203	MIR92B	227	MIR484	283
MIR10A	1	MIR423	184	MIR106A	219	MIR423	263
MIR1250	1	MIR107	178	MIR125A	194	MIR10A	262
MIR1301	1	MIR301A	169	MIR29A	186	MIR338	247
MIR139	1	MIR101	169	MIR532	179	MIR34A	244
MIR16-1	1	MIR221	165	MIR25	175	MIR301A	235
MIR185	1	MIR181A	158	MIR424	156	MIR92B	230
MIR192	1	MIR484	151	MIR101	148	MIR193B	229
MIR199A1	1	MIR374B	149	MIR26A	144	MIRLET7E	227
MIR26A2	1	MIR29B	145	MIR744	139	MIR25	193
MIR29A	1	MIR25	141	MIR30E	133	MIR532	174
MIR301A	1	MIR99B	114	MIR181B	132	MIR106A	165
MIR320B2	1	MIR30E	113	MIR222	131	MIR125A	161

MIR330	1
MIR3615	1
MIR421	1
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MIR505	1
MIR615	1
MIR92A1	1
MIR92B	1

MIR92B	111
MIR98	111
MIR222	109
MIR193B	108
MIR532	100
MIR106A	96
MIR744	95
MIR1307	92
MIR452	89
MIR660	83
MIR22	82
MIR424	81
MIR361	79
MIR148	75
MIR125A	74
MIR210	74
MIR652	73
MIR582	66
MIR128	66
MIR26B	65
MIR339	65
MIR378	64
MIR324	59
MIR320B	59
MIR140	55
MIR28	55
MIR30D	53
MIR185	46
MIR345	46
MIR421	44
MIR130A	42
MIR455	42
MIR193A	41
MIR320C	40
MIR132	39
MIR203	38
MIR29A	38
MIR574	38
MIR15A	33
MIR374A	33
MIR330	29
MIR671	29
MIR362	28
MIR126	27
MIR505	27
MIR331	26
MIR182	25
MIR590	25
MIR454	24
MIR33A	23
MIR212	22
MIR10B	21
MIR183	20
MIR502	20
MIR149	17
MIR188	17
MIR503	17

MIR374B	125
MIR148	122
MIR455	117
MIR99B	116
MIR22	108
MIR34A	104
MIR128	100
MIR421	98
MIR1307	97
MIR452	89
MIR574	87
MIR361	82
MIR423	82
MIRLET7G	82
MIR320B	79
MIRLET7C	77
MIR30D	67
MIRLET7E	62
MIR339	54
MIR582	54
MIR28	52
MIR197	51
MIR132	47
MIR330	47
MIR98	46
MIR192	45
MIR105	44
MIR185	39
MIR320C	39
MIR221	37
MIR193A	34
MIR140	33
MIR96	33
MIRLET7D	33
MIR126	32
MIR15A	32
MIR183	32
MIR374A	32
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MIR210	28
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MIR505	26
MIR652	26
MIR10B	23
MIR212	21
MIR33A	21
MIR342	21
MIR454	21
MIR181C	20
MIR26B	20
MIR362	20

MIR101	161
MIR1307	151
MIR424	149
MIR452	141
MIR99B	140
MIR148	132
MIR744	129
MIR98	126
MIR221	123
MIR421	117
MIR222	113
MIR22	109
MIR30E	105
MIR660	102
MIR128	99
MIR455	98
MIR582	97
MIR132	94
MIR320B	93
MIR378	79
MIR140	77
MIR361	77
MIR185	74
MIR210	71
MIR320C	71
MIR29A	70
MIR652	70
MIR330	60
MIR212	59
MIR345	57
MIR26B	53
MIR28	52
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MIR590	51
MIR15A	50
MIR362	50
MIR193A	49
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MIR152	46
MIR182	45
MIR192	45
MIR454	45
MIR324	44
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MIR505	40
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MIR126	35
MIR188	35
MIR96	34
MIR33A	33
MIR105	30
MIR342	28
MIR503	27
MIR10B	25
MIR149	25

MIR629	17	MIR660	18	MIR374A	20		
MIR197	16	MIR7-1	17	MIR628	20		
MIR192	15	MIR873	17	MIR7-1	20		
MIR675	14	MIR324	16	MIR203	19		
MIR501	13	MIR628	16	MIR1301	18		
MIR551B	13	MIR497	15	MIR33B	18		
MIR7-1	13	MIR378	13	MIR197	17		
MIR105	13	MIR29C	12	MIR502	17		
MIR152	12	MIR296	11	MIR675	17		
MIR181C	12	MIR500A	10	MIR629	16		
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MIR320D2	11	MIR671	10	MIR501	15		
MIR497	11	MIR877	10	MIR873	15		
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MIR96	10	MIR501	9	MIR1180	12		
MIR365-1	9	MIR675	9	MIR181C	12		
MIR1301	8	MIR615	8	MIR29C	12		
MIR335	8	MIR1280	7	MIR542	11		
MIR500A	8	MIR1301	7	MIR877	11		
MIR615	8	MIR199B	7	MIR3615	9		
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MIR877	8	MIR503	7	MIR551B	9		
MIR1180	7	MIR7-3	7	MIR1280	8		
MIR29C	7	MIR139	6	MIR335	8		
MIR32	7	MIR1908	6	MIR196B	7		
MIR33B	7	MIR2110	6	MIR2110	7		
MIR342	7	MIR146B	5	MIR7-2	7		
MIR545	7	MIR196B	5	MIR296	6		
MIR628	7	MIR199A2	5	MIR32	6		
MIR7-2	6	MIR301B	5	MIR500B	6		
MIR767	6	MIR502	5	MIR766	6		
MIR1296	5	MIR579	5	MIR139	5		
MIR199B	5	MIR7-2	5	MIR2355	5		
MIR2110	5	MIR1304	4	MIR301B	5		
MIR296	5	MIR2355	4	MIR550A1	5		
MIR542	5	MIR32	4	MIR579	5		
MIR1280	4	MIR328	4	MIR615	5		
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MIR130B	4	MIR500B	4	MIR1254	4		
MIR190	4	MIR550A1	4	MIR340	4		
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MIR196B	4	MIR1254	3	MIR589	4		
MIR199A1	4	MIR331	3	MIR641	4		
MIR199A2	4	MIR335	3	MIR876	4		
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MIR7-3	4	MIR551B	3	MIR146B	3		
MIR200C	3	MIR874	3	MIR181D	3		
MIR218-2	3	MIR1180	2	MIR195	3		
MIR2355	3	MIR129-2	2	MIR199A2	3		
MIR301B	3	MIR135B	2	MIR199B	3		
MIR328	3	MIR181D	2	MIR200C	3		
MIR365-2	3	MIR199A1	2	MIR30D	3		
MIR579	3	MIR203	2	MIR328	3		
MIR720	3	MIR217	2	MIR489	3		
MIR766	3	MIR218-1	2	MIR935	3		
MIR876	3	MIR218-2	2	MIR1247	2		
MIR940	3	MIR450B	2	MIR1256	2		

	MIR1266	2	MIR545	2	MIR199A1	2
	MIR129-1	2	MIR767	2	MIR218-1	2
	MIR129-2	2	MIR876	2	MIR218-2	2
	MIR146B	2	MIR935	2	MIR219-1	2
	MIR181D	2	MIRLET7BHG	2	MIR320D1	2
	MIR200B	2	MIR1227	1	MIR320E	2
	MIR2116	2	MIR1249	1	MIR365-1	2
	MIR320E	2	MIR1250	1	MIR450B	2
	MIR3615	2	MIR1256	1	MIR576	2
	MIR450B	2	MIR1272	1	MIR625	2
	MIR550A1	2	MIR1275	1	MIR720	2
	MIR636	2	MIR1286	1	MIR942	2
	MIR641	2	MIR1287	1	MIR95	2
	MIR651	2	MIR1294	1	MIR1226	1
	MIR874	2	MIR130B	1	MIR1228	1
	MIR887	2	MIR138-1	1	MIR1237	1
	MIR935	2	MIR181A2HG	1	MIR1275	1
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	MIR1256	1	MIR200C	1	MIR1292	1
	MIR1283-2	1	MIR205	1	MIR1296	1
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	MIR2278	1	MIR548E	1	MIR1914	1
	MIR320D1	1	MIR548Q	1	MIR1976	1
	MIR340	1	MIR584	1	MIR217	1
	MIR450A2	1	MIR588	1	MIR2277	1
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	MIR491	1	MIR651	1	MIR326	1
	MIR499	1	MIR760	1	MIR450A1	1
	MIR521-2	1	MIR766	1	MIR491	1
	MIR548K	1	MIR887	1	MIR499	1
	MIR548Q	1	MIR940	1	MIR519A1	1
	MIR550A2	1	MIR941-2	1	MIR522	1
	MIR570	1			MIR551A	1
	MIR577	1			MIR561	1
	MIR584	1			MIR597	1
	MIR588	1			MIR624	1
	MIR589	1			MIR636	1
	MIR624	1			MIR643	1
	MIR642A	1			MIR651	1
	MIR670	1			MIR7-3	1
	MIR760	1			MIR767	1
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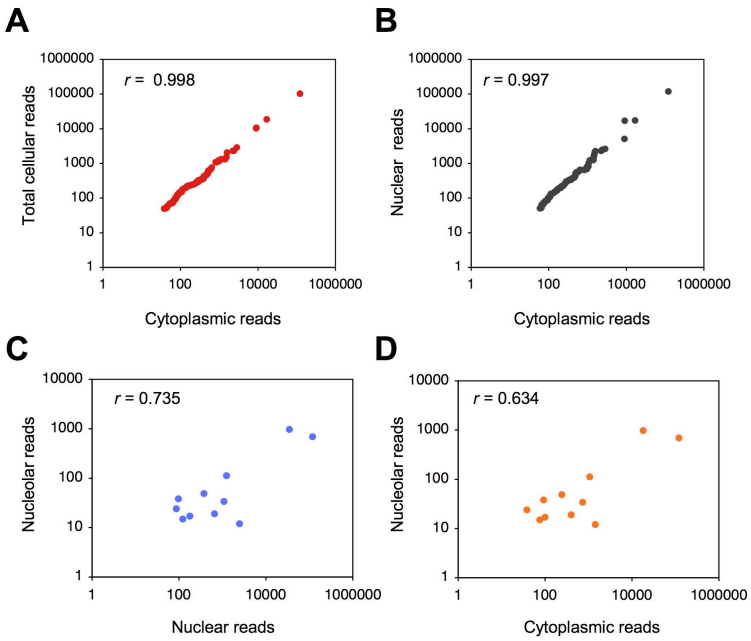

Figure S1. Scatter plot analyses of miRNA reads in the cellular compartments. (**A**) Total cellular reads compared to cytoplasmic reads. (**B**) Nuclear reads compared to cytoplasmic reads. (**C**) Nucleolar reads compared to nuclear reads. (**D**) Nucleolar reads compared to cytoplasmic reads. Read cut-offs; A and B ≥ 50 reads, C and D nucleolar reads ≥ 5. Pearson correlation coefficiences are indicated (*r*).

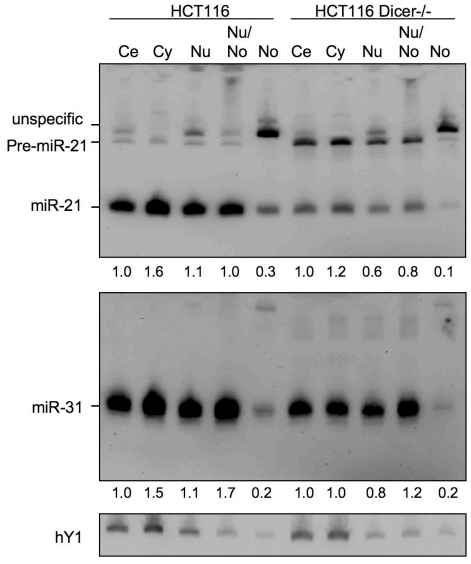

Figure S2. MiR-21 and miR-31 expression in subcellular compartments in Dicer-proficient and deficient cells. RNA was isolated from subcellular compartments of HCT116 wild –type and HCT116 Dicer -/- cells. RNA (25 µg) was separated on 15% gel and probed by Northern hybridization using miR-21 and miR-31 LNA probes. The respective mature and precursor forms are shown. hY1 was used as a control for cellular fractionation. Relative abundancies of miRNAs are expressed as compared to total cellular RNA in each cell line set as 1.