

Supplemental Data

Low MiR-187 Expression Promotes Resistance to Chemoradiation Therapy *In Vitro* and Correlates with Treatment Failure in Patients with Esophageal Adenocarcinoma

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Supplementary Table S1. MiRNA significantly altered in pre-treatment EAC biopsies from responders and non-responders to neoadjuvant CRT.

MicroRNA	Responder (n=8)		Non-responder (n=10)		p-value
	Mean	Median (range)	Mean	Median (range)	
hsa-let-7a-2*	0.22	0.10 (0.04-1.00)	0.38	0.32 (0.13-0.97)	0.007
hsa-let-7d	0.91	0.90 (0.20-1.59)	0.52	0.50 (0.19-0.97)	0.018
hsa-let-7f-1*	2.03	1.96 (1.00-3.03)	1.36	1.18 (0.22-2.58)	0.034
hsa-let-7g	1.41	1.31 (0.90-2.03)	1.03	1.03 (0.43-1.67)	0.050
hsa-miR-103-2*	4.57	2.29 (0.57-16.61)	108.48	41.33 (2.03-568.92)	0.003
hsa-miR-1184	0.75	0.71 (0.56-1.02)	1.01	0.95 (0.60-1.65)	0.050
hsa-miR-1236	0.46	0.15 (0.10-1.48)	2.22	0.92 (0.18-8.36)	0.029
hsa-miR-1237	1.37	1.30 (1.00-2.12)	2.5	2.11 (1.47-5.81)	0.004
hsa-miR-1248	0.61	0.45 (0.16-1.53)	0.24	0.25 (0.07-0.41)	0.019
hsa-miR-125a-3p	1.41	1.31 (0.90-2.03)	1.03	1.03 (0.43-1.67)	0.050
hsa-miR-1296	3.31	1.14 (0.74-15.39)	0.77	0.75 (0.05-1.96)	0.029
hsa-miR-140-3p	0.92	1.01 (0.41-1.39)	2.61	2.90 (0.77-4.80)	0.019
hsa-miR-142-3p	0.93	0.94 (0.15-1.65)	0.35	0.27 (0.02-1.37)	0.037
hsa-miR-145*	1.7	0.44 (0.09-9.56)	3.83	3.00 (0.71-14.50)	0.029
hsa-miR-147	0.33	0.25 (0.12-1.00)	0.62	0.55 (0.21-1.09)	0.046
hsa-miR-147b	0.34	0.23 (0.15-1.00)	0.9	0.71 (0.25-2.08)	0.009
hsa-miR-151-5p	0.98	0.96 (0.31-1.64)	0.7	0.67 (0.46-0.95)	0.028
hsa-miR-155*	1.81	1.05 (0.31-3.97)	13.26	7.19 (2.31-60.54)	0.005
hsa-miR-16-2*	0.91	0.90 (0.20-1.59)	0.52	0.50 (0.19-0.97)	0.037
hsa-miR-17	0.61	0.45 (0.16-1.53)	0.24	0.25 (0.07-0.41)	0.019
hsa-miR-181a-2*	25.07	1.86 (1.00-140.70)	101.54	96.74 (6.78-243.82)	0.009
hsa-miR-187	0.81	0.62 (0.35-2.09)	2.41	2.01 (0.69-6.36)	0.005
hsa-miR-1979	2.04	1.06 (0.70-7.83)	1.06	0.85 (0.40-3.52)	0.001
hsa-miR-21	0.75	0.71 (0.56-1.02)	1.01	0.95 (0.60-1.65)	0.050
hsa-miR-212	0.52	0.42 (1.58 x 10 ⁻⁴ -1.17)	1.29	1.39 (0.12-2.70)	0.046
hsa-miR-220c	1.68	1.51 (0.88-3.92)	0.82	0.60 (0.12-1.56)	0.029
hsa-miR-26a	1.18	1.00 (0.53-2.91)	0.59	0.52 (0.23-1.18)	0.015
hsa-miR-296-3p	1.6	1.02 (0.08-4.53)	11.83	5.91 (1.24-62.96)	0.009
hsa-miR-30c	0.99	1.00 (0.69-1.46)	0.64	0.65 (0.21-1.13)	0.019
hsa-miR-30c-1*	1.18	1.00 (0.53-2.91)	0.59	0.52 (0.23-1.18)	0.015

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Supplementary Table S1. *Continued.*

hsa-miR-31	0.33	0.25 (0.12-1.00)	0.62	0.55 (0.21-1.09)	0.046
hsa-miR-320a	1.37	1.30 (1.00-2.12)	2.5	2.11 (1.47-5.81)	0.004
hsa-miR-320b	0.46	0.43 (0.11-1.00)	1.86	0.73 (0.29-10.62)	0.034
hsa-miR-330-5p	914.82	0.67 (2.96x 10 ⁻⁶ -7313.00)	9720.09	6111.71 (2424.69-28958.61)	0.004
hsa-miR-331-3p	2.03	1.96 (1.00-3.03)	1.36	1.18 (0.22-2.58)	0.034
hsa-miR-339-3p	8.69	5.76 (1.00-26.89)	68.02	20.97 (3.82-458.14)	0.029
hsa-miR-340*	1.84	1.32 (1.00-3.39)	1.05	0.87 (0.43-2.23)	0.023
hsa-miR-370	0.88	0.67 (0.31-2.09)	1.6	1.15 (0.48-3.19)	0.034
hsa-miR-373*	0.87	0.67 (0.31-2.04)	1.84	1.46 (0.50-5.29)	0.034
hsa-miR-431*	0.86	0.72 (0.35-2.42)	2.65	1.77 (1.09-8.30)	0.004
hsa-miR-432*	0.76	0.69 (0.22-2.08)	0.14	0.06 (0.03-0.55)	0.003
hsa-miR-448	1.46	1.14 (0.38-4.58)	0.75	0.54 (0.29-1.80)	0.023
hsa-miR-452*	24.73	9.40 (1.00-97.34)	39.73	3.54 (1.60-355.07)	0.050
hsa-miR-488*	1.07	1.08 (0.21-1.89)	0.54	0.54 (0.26-0.97)	0.023
hsa-miR-495	1.84	1.32 (1.00-3.39)	1.05	0.87 (0.43-2.23)	0.023
hsa-miR-502-5p	1.54	1.67 (0.06-2.83)	0.66	0.32 (0.04-1.75)	0.046
hsa-miR-513a-3p	0.99	1.00 (0.69-1.46)	0.64	0.65 (0.21-1.13)	0.019
hsa-miR-518d-5p	0.48	0.28 (0.17-1.34)	0.59	0.48 (0.21-1.30)	0.009
hsa-miR-519c-3p	1.06	0.75 (0.20-3.51)	0.4	0.41 (0.03-0.72)	0.029
hsa-miR-532-5p	1.06	0.69 (0.29-2.32)	0.32	0.20 (0.08-0.82)	0.015
hsa-miR-555	0.25	0.10 (0.01-1.00)	0.31	0.29 (0.14-0.58)	0.046
hsa-miR-556-3p	3.63	1.12 (0.17-13.03)	32.3	13.86 (0.73-120.27)	0.015
hsa-miR-556-5p	5.85	6.75 (1.00-11.23)	2.15	1.62 (0.15-6.32)	0.046
hsa-miR-558	0.98	0.83 (0.42-1.82)	2.09	1.60 (0.34-7.86)	0.042
hsa-miR-592	48.66	4.65 (1.00-335.43)	189.97	60.78 (4.08-762.68)	0.029
hsa-miR-630	0.93	0.94 (0.15-1.65)	0.35	0.27 (0.02-1.37)	0.037
hsa-miR-634	2.97	0.99 (0.65-16.60)	0.69	0.64 (0.38-1.05)	0.019
hsa-miR-640	5.56	4.10 (1.00-16.37)	1.19	0.76 (0.11-4.61)	0.007
hsa-miR-647	1.54	1.67 (0.06-2.83)	0.66	0.32 (0.04-1.75)	0.046
hsa-miR-661	2.04	1.06 (0.70-7.83)	1.06	0.85 (0.40-3.52)	0.046
hsa-miR-720	0.98	0.83 (0.42-1.82)	2.09	1.60 (0.34-7.86)	0.042
hsa-miR-769-3p	0.89	0.87 (0.42-1.37)	0.27	0.21 (3.00 x 10 ⁻³ - 0.75)	0.002
hsa-miR-769-5p	0.67	0.68 (0.20-1.21)	1.54	1.10 (0.45-5.97)	0.042
hsa-miR-886-5p	0.46	0.43 (0.11-1.00)	1.86	0.73 (0.29-10.62)	0.034
hsa-miR-99b*	0.2	0.02 (0.01-1.00)	0.23	0.19 (0.06-0.48)	0.034
hsa-miRPlus-C1066	12.06	1.29 (1.00-39.01)	89.74	50.12 (22.65-297.71)	0.003
hsa-miRPlus-D1061	0.38	0.28 (0.10-1.00)	4.37	1.23 (0.21-28.15)	0.011

Supplementary Table S2. Genes significantly downregulated in miR-187 overexpressing OE33 R cells, compared to vector control.

Gene	Locus	Vector control	miR-187
APOL6	chr22:36044423-36064456	20.79	15.48
UNC93B1	chr11:67758574-67771593	104.27	77.21
MXD1	chr2:70142172-70170076	11.79	8.70
SP110	chr2:231033644-231090444	72.40	53.15
IFI16	chr1:158979681-159024945	73.84	53.76
MOV10	chr1:113217047-113243368	70.83	51.54
CDKN1A	chr6:36644236-36655116	67.61	49.12
BST2	chr19:17513754-17516384	331.99	240.67
IRF7	chr11:612554-615999	583.49	422.58
B3GNT3	chr19:17905918-17926789	22.21	16.00
IRF1	chr5:131746464-131826465	63.81	45.74
HIP1R	chr12:123320038-123347507	30.53	21.87
PLAUR	chr19:44150246-44174498	214.19	153.42
C3	chr19:6677845-6720662	11.28	8.05
PRIC285	chr20:62189438-62205592	145.23	102.85
C19orf66	chr19:10196805-10213425	54.39	38.21
SEMA7A	chr15:74701629-74726299	34.69	24.36
PPM1K	chr4:89181531-89205888	4.89	3.43
HLA-H	chr6:29855382-29858856	40.39	28.26
CMPK2	chr2:6988450-7005936	18.99	13.23
LY6E	chr8:144099901-144103827	259.50	180.62
IFIH1	chr2:163123588-163175256	90.99	63.03
TINF2	chr14:24708850-24711880	15.54	10.76
IFI44L	chr1:79086087-79111830	11.61	8.02
MX2	chr21:42733949-42780869	144.97	99.56
MOBK2C	chr1:47073386-47082563	6.40	4.39
SECTM1	chr17:80278899-80291921	58.35	40.00
TMEM27	chrX:15645440-15683154	16.72	11.45
APOL1	chr22:36649116-36663577	151.91	103.86
NLRC5	chr16:57023409-57117436	14.27	9.75
PARP10	chr8:145051319-145060635	102.75	69.68
CD274	chr9:5450502-5470567	8.70	5.89
PLEKHA4	chr19:49340351-49371885	22.95	15.51
DDX58	chr9:32455299-32526322	51.03	34.44
RARRES3	chr11:63304272-63313930	302.42	203.64
KRT16	chr17:39766030-39769079	13.75	9.26
UBE2L6	chr11:57319127-57335803	263.53	176.45
STAT2	chr12:56735381-56754037	47.35	31.64
RAPGEF3	chr12:48128452-48152889	5.15	3.42
MT2A	chr16:56642477-56643409	2,148.53	1,423.24
PSMB9	chr6:32821937-32827628	61.40	40.59
IFITM3	chr11:319672-320914	1,117.03	733.92
LAMP3	chr3:182840002-182880667	35.28	23.17
CD68	chr17:7482804-7485429	23.11	15.17
HLA-B	chr6:31321648-31324989	891.68	584.92
TLR3	chr4:186990308-187006252	3.78	2.47
RNF19B	chr1:33402049-33430370	24.03	15.45
*	chr15:45023406-45025268	43.51	27.97
TRANK1	chr3:36868307-36986548	5.02	3.21
APOL2	chr22:36622254-36636000	101.98	65.27
BTN3A1	chr6:26402464-26415444	4.97	3.16

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Supplementary Table S2. *Continued.*

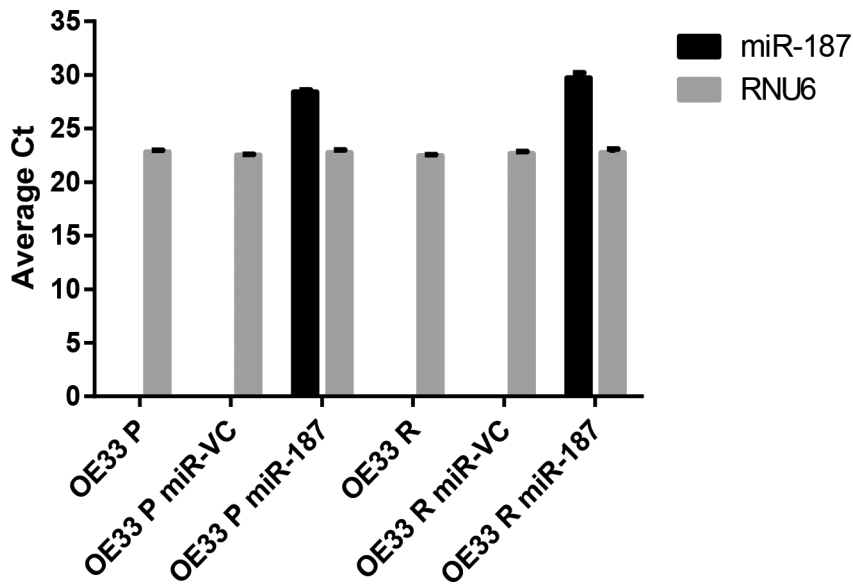
LMO2	chr11:33880122-33913836	35.88	22.74
*	chr1:174958930-174961330	6.74	4.27
SLFN12	chr17:33738080-33759543	4.57	2.88
ISG15	chr1:948846-949919	3,842.28	2,426.24
NT5C3	chr7:33053741-33102409	136.34	85.44
PRR15	chr7:29603426-29606911	22.43	14.02
SP100	chr2:231280870-231410317	163.96	102.11
EPSTI1	chr13:43462116-43566413	43.15	26.58
IFIT2	chr10:91061705-91069033	254.00	155.35
CEACAM1	chr19:43011457-43032661	7.49	4.58
IFIT1	chr10:91152321-91163744	752.85	458.37
ETV7	chr6:36321992-36355577	44.38	27.02
IFI6	chr1:27992571-27998724	1,168.40	710.37
CCL5	chr17:34198495-34207377	41.73	25.30
IFI27	chr14:94577078-94583033	504.97	304.57
TAP1	chr6:32808493-32821748	183.81	110.65
HLA-F	chr6:29691116-29716826	162.54	97.30
IL22RA1	chr1:24446260-24469775	5.37	3.21
GSDMB	chr17:38060847-38075008	71.93	42.66
HERC5	chr4:89378267-89427314	8.88	5.25
OAS1	chr12:113344738-113357712	319.96	188.88
LGALS9	chr17:25958173-25976586	78.64	46.38
USP18	chr22:18632757-18660162	107.23	62.64
PXK	chr3:58318616-58411611	3.12	1.81
RTP4	chr3:187086167-187089369	12.38	7.17
PLXNA2	chr1:208195587-208417665	1.96	1.13
*	chr1:174961391-174964434	7.14	4.11
CD74	chr5:149781199-149792499	7.00	4.01
MMP13	chr11:102813720-102826463	7.99	4.54
IFIT3	chr10:91087601-91100725	203.75	114.78
APOL3	chr22:36536370-36562225	3.63	2.03
SAMD9L	chr7:92759367-92777680	47.86	26.58
OASL	chr12:121458094-121476780	369.93	204.92
IFITM1	chr11:313990-315272	302.78	167.71
MX1	chr21:42792519-42831141	83.31	45.71
GBP4	chr1:89646830-89664633	2.35	1.26
GBP1	chr1:89517986-89531043	13.46	7.21
OAS2	chr12:113416255-113449572	152.63	81.47
KRT17	chr17:39775691-39780882	100.46	53.47
IFI35	chr17:41158741-41166476	138.41	72.82
NCF2	chr1:183524696-183560056	7.42	3.89
SAA1	chr11:18287807-18291523	14.82	7.66
IDO1	chr8:39771327-39786309	13.66	7.04
CFB	chr6:31913720-31919861	19.83	10.20
XAF1	chr17:6659155-6678964	16.81	8.60
TNFSF10	chr3:172223297-172241297	21.43	10.76
BTN3A3	chr6:26440699-26453643	2.98	1.48
ZNF526	chr19:42724491-42732353	17.39	8.38
ISG20	chr15:89182038-89198879	180.28	86.55
HRASLS2	chr11:63320241-63330855	17.91	8.58
DHX58	chr17:40253421-40264751	5.44	2.59
*	chr5:90604836-90606159	2.49	1.18
CCL22	chr16:57392694-57400102	1.51	0.71

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Supplementary Table S2. *Continued.*

RHEBL1	chr12:49458467-49463775	4.01	1.83
PRICKLE4	chr6:41748499-41755110	4.52	2.06
UBA7	chr3:49842637-49851391	4.80	2.13
GBP5	chr1:89724633-89738544	1.67	0.71
BCL2L14	chr12:12223877-12252627	2.17	0.91
GMPR	chr6:16238810-16295780	6.45	2.65
RSAD2	chr2:7017795-7038363	65.43	26.56
TRIM22	chr11:5710816-5732093	27.00	10.92
*	chr12:54388732-54389310	3.44	1.33
HECTD2	chr10:93066718-93371217	16.63	6.37
NUPR1	chr16:28548661-28550495	5.20	1.91
ZBP1	chr20:56178644-56195632	10.09	3.56
IL29	chr19:39786964-39789312	29.40	10.09
*	chr1:174957775-174957993	58.96	19.39
BATF2	chr11:64755416-64764517	25.57	8.38
RAB11FIP4	chr17:29718641-29865232	18.08	5.91
CXCL11	chr4:76932336-77033955	5.92	1.93
*	chr2:177065589-177065961	6.88	2.10
CXCL10	chr4:76932336-77033955	14.99	4.39
RRAD	chr16:66955581-66959439	38.20	10.51
KRT14	chr17:39738530-39743147	4.73	1.27
IL28B	chr19:39734271-39735611	16.25	4.16
*	chr5:176513441-176513467	35,256.90	8,685.15
C7orf43	chr7:99752042-99756345	122.98	29.26
IL28A	chr19:39759156-39760732	25.53	5.96
IFNB1	chr9:21077103-21077943	6.94	1.24
*	chrX:18245705-18245731	35,226.00	4,943.46
PYROXD2	chr10:100143321-100174978	10.25	0.97
*	chr14:105010581-105025113	56,946,600.00	0.00
*	chr14:50505431-50505860	1.96	0.00
*	chr5:108824444-108829226	8,256.79	0.00
*	chr6:11463226-11473719	10,740.30	0.00
*	chr7:20368988-20369125	22.99	0.00
KRT19P2,MIR492	chr12:95228173-95228804	23.85	0.00
*	chr16:33964497-33964534	1,018.30	0.00
*	chr15:59699955-59700157	3.90	0.00
*	chr17:58050941-58051088	8.63	0.00

*Denotes novel non-annotated genes.



Supplementary Figure S1. Confirmation of miR-187 overexpression by qPCR. MiR-187 overexpression was confirmed in OE33 P and OE33 R cells at 24 h post transfection, when compared to a scrambled vector control. There was no detectable miR-187 expression in the OE33 P or OE33 R cell lines. RNU6 expression was measured as an endogenous control. Data are presented as the mean \pm SEM from 3 independent experiments.