

Additional File 4

Table S1. KEGG signaling pathways enriched in experimentally validated and predicted target genes of differentially up-regulated miRNAs in DLD1 and HT29 cells grown in 3D.

KEGG pathway	Database	DLD1			HT29		
		miRNAs	Genes	p value	miRNA	Genes	p value
ECM-receptor interaction	miRTarBase	20	19	6.71e-05	4	8	9.80e-03
	microT-CDS	78	64	3.44e-05	14	47	2.17e-33
Gap junction	miRTarBase	29	22	4.89e-06	7	12	7.56e-05
	microT-CDS	84	68	6.10e-04	18	42	7.51e-03

Note: a significant pathway enrichment was considered if corrected p value was <0.05 and at least 5 target genes were assigned for a functional group.

Table S2. Putative miRNA target genes associated with regulation of ECM-receptor interaction and formation of gap junctions.

KEGG pathway	Gene	Database	DLD1	HT29
ECM-receptor interaction	COL1A1	miRTarbase	miR-29b-3p , miR-29c-3p	miR-29b-3p
		microT-CDS	let-7f-5p, miR-3184-5p, miR-423-5p, miR-29a-3p, miR-29b-3p , miR-29c-3p, let-7a-5p, let-7c-5p, let-7b-5p	miR-29b-3p
	COL4A1	miRTarbase	miR-29a-3p, miR-29b-3p , miR-29c-3p	miR-29b-3p
		microT-CDS	let-7b-3p, miR-429, miR-628-5p, let-7f-5p, let-7a-3p, miR-320d, miR-374b-5p, miR-152-3p, miR-29a-3p, miR-29b-3p , miR-200c-3p, miR-148a-3p, miR-374a-5p, miR-200b-3p, miR-29c-3p, let-7a-5p, let-7c-5p, let-7b-5p	miR-29b-3p
	COL4A2	miRTarbase	miR-210-3p , miR-29a-3p, miR-29b-3p , miR-29c-3p	miR-210-3p , miR-29b-3p
		microT-CDS	miR-29a-3p, miR-29b-3p , miR-29c-3p	miR-29b-3p
	ITGA6	miRTarbase	miR-29a-3p, miR-29b-3p , miR-29c-3p	miR-29b-3p
		microT-CDS	let-7b-3p, miR-582-5p, miR-30c-5p, miR-30d-5p, miR-340-5p, let-7a-3p, miR-141-3p , miR-32-5p, miR-30b-5p, miR-200a-3p, miR-9-5p	miR-30b-5p, miR-141-3p , miR-200a-3p
	ITGA9	miRTarbase	miR-194-5p	miR-194-5p
		microT-CDS	miR-30c-5p, miR-30d-5p, miR-340-5p, miR-152-3p, miR-148a-3p, miR-30b-5p , miR-194-3p	miR-30b-5p
Gap junction	EGFR	miRTarbase	miR-183-5p, miR-29b-3p , miR-9-3p	miR-29b-3p
		microT-CDS	miR-30c-5p, miR-30d-5p, miR-183-5p, miR-30b-5p , miR-203b-3p, miR-9-3p	miR-30b-5p
	GRB2	miRTarbase	let-7a-5p, miR-146a-5p, miR-27a-3p , miR-574-3p	miR-27a-3p
		microT-CDS	miR-429, miR-340-5p, miR-27a-3p , miR-126-5p, miR-200c-3p, miR-200b-3p, miR-27b-3p	miR-27a-3p
	KRAS	miRTarbase	miR-200a-3p , miR-27a-3p	miR-200a-3p , miR-27a-3p
		microT-CDS	miR-27a-3p , miR-182-5p, miR-126-5p, miR-27b-3p	miR-27a-3p
	MAP2K1	miRTarbase	let-7a-5p, miR-152-3p, miR-181a-5p , miR-200c-3p, miR-27a-3p , miR-340-5p	miR-27a-3p
		microT-CDS	miR-30c-5p, miR-30d-5p, miR-340-5p, miR-320d, miR-27a-3p , miR-126-5p, miR-30b-5p , miR-27b-3p, miR-142-5p	miR-30b-5p , miR-142-5p , miR-27a-3p
	MAPK1	miRTarbase	miR-181a-5p , miR-181b-5p, miR-34a-5p	miR-181b-5p
		microT-CDS	miR-34a-5p, miR-181a-5p	miR-552-3p
	PDGFA	miRTarbase	miR-181a-5p , miR-28-5p, miR-335-5p	miR-335-5p
		microT-CDS	miR-17-3p, miR-628-5p, miR-769-5p, miR-320d, miR-140-3p, miR-181a-2-3p, miR-142-5p	miR-142-5p , miR-24-3p
	PDGFB	miRTarbase	miR-29b-3p	miR-29b-3p
		microT-CDS	miR-30c-5p, miR-30d-5p, miR-200a-5p, miR-29a-3p, miR-29b-3p , miR-30b-5p , miR-375 , miR-29c-3p	miR-375 , miR-29b-3p , miR-30b-5p
	PDGFC	miRTarbase	miR-29b-3p	miR-29b-3p
		microT-CDS	miR-29a-3p, miR-29b-3p , miR-29c-3p	miR-29b-3p
	PDGFRA	miRTarbase	miR-29b-3p	miR-29b-3p
		microT-CDS	miR-30c-5p, miR-30d-5p, miR-29a-3p, miR-29b-3p , miR-30b-5p , miR-29c-3p, miR-142-5p	miR-142-5p , miR-30b-5p , miR-29b-3p
	PDGFRA	miRTarbase	let-7b-5p, miR-146b-5p, miR-29b-3p , miR-34a-5p	miR-29b-3p
		microT-CDS	miR-340-5p, miR-34a-5p, miR-374b-5p, miR-27a-3p , miR-182-5p , miR-141-3p , miR-126-5p, miR-200a-3p , miR-27b-3p , miR-203b-5p, miR-146a-5p, miR-142-5p , miR-9-3p, miR-146b-5p	miR-142-5p , miR-200a-3p , miR-141-3p , miR-27a-3p

PDGFRB	miRTarbase	-	miR-29b-3p, miR-30b-5p
	microT-CDS	-	miR-24-3p

Note: bold script indicates a significant expression change of particular miRNA observed in both CRC cell lines.