Additional file 5. Previous literatures showing the implication of miR-15/107 family and cell cycle related biological events

miRNAs	Role in cell cycle related events	References
miR-15a-5p	Human miR-15a-5p inhibits pituitary tumor cell proliferation, invasion and migration by targeting Sox5.	(1)
	miR-15a inhibits cell proliferation and epithelial to mesenchymal transition in pancreatic ductal adenocarcinoma by down-regulating Bmi-1 expression.	(2)
	Up-regulation of miR-15a-5p suppresses cell proliferation, migration and invasion of these ectopic stem cells by targeting the 3' untranslated region of VEGFA.	(3)
	Increased miR-15a suppresses the Cyclin E1, regulated CDK2 and promotes the G_1/S transition.	(4)
	Overexpression of VEGFA or inhibition of miR-15a-5p promotes cell proliferation in osteoarthritis chondrocytes.	(5)
	miR-15a-5p suppresses the proliferation, motility, invasiveness and angiogenic potential and increased apoptosis when combined with docetaxel in chemotherapy-resistant ovarian cancer.	(6)
	High levels of miR-15a-5p in the young poor ovarian response group represses granulosa cell proliferation by regulating the PI3K-AKT-mTOR signaling pathway and promoted apoptosis through BCL2 and BAD.	(7)
	miR-15a-5p suppresses endometrial cancer cell growth via Wnt/β-catenin signaling pathway by inhibiting WNT3A.	(8)
	Ectopic overexpression of miR-15a-5p suppresses cancer proliferation, induces cell cycle arrest in HepG2 or SNU-182 cells *in vitro*, and inhibits HCC tumor growth *in vivo*.	(9)
miR-16-5p	MicroRNA-16-5p overexpression suppresses proliferation and invasion as well as triggers apoptosis by targeting VEGFA in breast carcinoma.	(10)
	Acute myeloid leukemia (AML) is associated with heterogeneous clonal proliferation, while numerous microRNAs are involved in AML and associated with the expression level of VEGF, including miR-16-5p.	(11)
miR-103a-3p	Overexpression of miR-103a-3p inhibits the proliferation	(12)

	and osteogenic differentiation of hADSCs (human adipose tissue-derived stromal cells), downregulates protein and mRNA levels of predicted target of miR-103a-3p (CDK6 and DICER1).	
	Over-expression of circTCF25 could down-regulate miR-103a-3p and miR-107, increase CDK6 expression, and promote proliferation and migration *in vitro* and *in vivo*.	(13)
miR-107	MicroRNA-107 promotes proliferation of gastriccancer cells by targeting cyclin dependent kinase 8.	(14)
	miR-107 promotes hepatocellular carcinoma cell proliferation by targeting Axin2.	(15)
	MicroRNA-107 inhibits tumor growth and metastasis by targeting the BDNF-mediated PI3K/AKT pathway in human non-small lung cancer.	(16)
	Up-regulation of MicroRNA-107 induces proliferation in human gastric cancer cells by targeting the transcription factor FOXO1.	(17)
	Up-regulation of miR-107 decreases proliferation rates, colony-forming abilities, tumorigenicity and increases apoptosis rates by targeting DKK-1.	(18)
	Treatment with miR-107 significantly blockes cell proliferation, DNA replication, colony formation, and invasion in SCC25 and CAL27 cells by targeting protein kinase Cε.	(19)
	miR-107 directly targets MCL1 and activates ATR/Chk1 pathway to inhibit proliferation, migration and invasiveness of cervical cancer cells.	(20)
	miR-107 overexpression inhibits cell proliferation in human neuroblastoma and ratpituitary adenoma cells by targeting AIP.	(21)
	Decreased miR-107 could inhibit tumor growth in a nude mouse model of triple-negative breast cancer.	(22)
	Overexpression of miR-107 in glioma cells leads to inhibition of HBMVEC proliferation, migration and tube formation ability.	(23)
	MicroRNA-107 inhibits U87 glioma cell growth and invasion by target Notch2.	(24)
	miR-107 overexpression suppresses cell proliferation in	(25)

	glioma cells, whereas miR-107 knockdown promotes cell growth in MO59K cell line.	
	P53-induced microRNA-107 inhibits proliferation of glioma cells and down-regulates the expression of CDK6 and Notch-2.	(26)
	MiR-107 suppresses proliferation of hepatoma cells through targeting HMGA2 mRNA 3'UTR	(27)
	miR-107 can simultaneously target large tumor suppressor 2 (LATS2) and synchronically modulate its expression, thereby promoting proliferation and invasion of GAC cells.	(28)
	miR-107 improves the proliferative and migratory ability of HepG2 cells.	(29)
	miR-107 mimic leads to a significant increase in the G_0/G_1 population and a significant decrease in the G_2/M population, and functions as a tumor suppressor in human esophageal squamous cell carcinoma.	(30)
miR-195-5p	Overexpression of miR-195-5p significantly suppresses renal cell carcinoma growth in vitro and in vivo by targeting REGγ.	(31)
	Overexpression of miR-195-5p inhibits cell proliferation, reduces cell colony formation, suppresses cell migration and causes an accumulation of cells in the G_1 phase of the cell cycle by regulating CCNE1 in breast cancer.	(32)
	miR-195-5p suppresses the proliferation, migration, and invasion of oral squamous cell carcinoma by targeting TRIM14.	(33)
	Overexpression of miR-195-5p in hepatoma cells reduces PHF19 expression, leads to suppression of hepatoma cell invasion, migration and proliferation in *vitro*.	(34)
	MicroRNA-195-5p suppresses glucose uptake and proliferation of human bladder cancer T24 cells by regulating GLUT3 expression.	(35)
	MicroRNA-195-5p suppresses osteosarcoma cell proliferation and invasion by suppressing naked cuticle homolog 1.	(36)
	Anti-apoptosis endothelial cell-secreted microRNA-195-5p promotes pulmonary arterial smooth muscle cell proliferation and migration in pulmonary arterial hypertension.	(37)

miR-424-5p	miR-424-5p promotes proliferation of gastric cancer by targeting Smad3 through TGF-β signaling pathway.	(38)
	Downregulated miR-424-5p causes the overexpression of MEK1 and cyclin E1 in the psoriatic keratinocytes, resulting in the keratinocyte overgrowth and hyper-proliferation.	(39)
	miR-424-5p mimics could decrease the invasion, metastasis and proliferation of esophageal squamous carcinom cells, while SMAD7 is a specific target gene for miR-424-5p.	(40)
	Ectopic expression of miR-424 promotes proliferation and invasion of gastric cancer cells by targeting LATS1 gene.	(41)
	miR-424-5p plays its role as an anti-onco gene in cervical cancer cell growth by targeting KDM5B via the Notch signaling pathway.	(42)
	miR-424-5p increases proliferation, migration and invasion of pancreatic cancer cells, while inhibits cell apoptosis.	(43)
	miR-424-5p could prevent the proliferation, migration, and invasion in NSCLC cells.	(44)
miR-497-5p	miR-497-5p inhibits cell proliferation and invasion by targeting KCa3.1 in angiosarcoma.	(45)
miR-503-5p	miR-503-3p (the passenger strand of miR-503-5p) inhibits cell proliferation in lung cancer.	(46)
miR-646	miR-646 negatively regulates NOB1 and inhibits the proliferation and migration of renal cancer cells.	(47)
	miR-646 inhibits cell proliferation by targeting FOXK1 in gastric cancer.	(48)
	Overexpression of miR-646 inhibits cell proliferation and metastasis in lung cancer.	(49)
	Overexpression of miR-646 inhibits cell proliferation, migration, and invasion in osteosarcoma cells.	(50)
miR-6838-5p	None	-

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