

Table S1. T-EVs regulate macrophage phenotypes.

Cargos	Donor cell	Regulation of cargos	Targets	Macrophage Cell Line	Biological function on macrophage	Biological function	Ref.
miR-9	HNSCC cell	HPV ⁺	PPAR δ	THP-1	M1 polarization	Increasing HPV ⁺ HNSCC radiosensitivity	[1]
miR-15b	Hepatocellular carcinoma cell	Arsenite treatment	LATS1/Hippo	THP-1	M2 polarization	Promoting tumor cell proliferation, migration and invasion	[2]
miR-16	Multiple myeloma cell	/	IKK α / β complex	U937	M2 polarization	Supporting tumor cell growth	[3]
miR-19b-3p	Lung adenocarcinoma cell	/	PTPRD/STAT3	THP-1	M2 polarization	Facilitating tumor cell invasion, migration and tumor metastasis	[4]
miR-21	Head and neck cancer cell	Snai1 overexpression	PDCD4/IL-12A	PBMC	M2 polarization	Promoting tumor progression and indicating the real-time situation in the TME	[5]
miR-21	Bladder cancer cell	/	PTEN/p-AKT/STAT3/6	THP-1 & BMDM	M2 polarization	Promoting tumor cell growth, migration and invasion	[6]
miR-21-3p/miR-125b-5p/miR-181d-5p	Epithelial ovarian cancer (EOC) cell	Hypoxic condition	SOCS4/5/STAT3	U937	M2 polarization	Promoting EOC cell proliferation and migration in a feedback loop	[7]
miR-21-5p	Esophageal squamous cell carcinoma cell	/	PTEN/PI3K/AKT/STAT6	THP-1	M2 polarization	Promoting tumor cell migration and invasion	[8]
miR-25-3p/miR-130b-3p/miR-425-5p	Colorectal cancer cell	CXCL12/CXCR4 activation	PTEN/PI3K/AKT	THP-1 & Raw 264.7	M2 polarization	Enhancing epithelial-mesenchymal transition (EMT) and liver metastasis	[9]
miR-27a-3p	Glioblastoma cell	Normoxic or hypoxic condition	EZH1/KDM3A/CTGF	THP-1	M2 polarization	Promoting tumor cell proliferation, migration and invasion	[10]
miR-29a-3p	Oral squamous cell carcinoma cell	/	SOCS1/p-STAT6	THP-1	M2 polarization	Promoting tumor cell proliferation and invasion	[11]
miR-33/miR-130	Breast cancer cell	Electroporation	/	PBMC & Peritoneal macrophage	M1 polarization	Inhibiting tumor progression	[12]

Cargos	Donor cell	Regulation of cargos	Targets	Macrophage Cell Line	Biological function on macrophage	Biological function	Ref.
miR-125b/wt-p53	Lung adenocarcinoma cell	Transfection	/	J774	M1 polarization	Supporting anti-tumor environment	[13]
miR-138-5p	Breast cancer cell	/	KDM6B	THP-1 & Raw 264.7	M2 polarization	Promoting lung metastasis	[14]
miR-145	Colorectal cancer cell	/	Histone deacetylase 11	THP-1 & NOMO-1	M2 polarization	Promoting tumor progression	[15]
miR-146a-5p	Hepatocellular carcinoma cell	SALL4	NF- κ B and pro-inflammatory factors	THP-1 & Raw 264.7	M2 polarization	Promoting TME formation and tumor progression	[16]
miR-155-3p/IL-6	Glioma cell	Hypoxic condition	IL-6-pSTAT3-miR-155-3p-autophagy-pSTAT3 positive feedback loop	U937 & THP-1	M2 polarization	Advancing immunosuppressive microenvironment formation and promoting glioma progression	[17]
miR-222	Adriamycin-resistant breast cancer cell	/	PTEN/AKT	THP-1	M2 polarization	Stimulating tumor growth and pre-metastatic niche formation	[18]
miR-301a-3p	Pancreatic cancer cell	Hypoxic condition	PTEN/PI3K	THP-1	M2 polarization	Promoting tumor cell migration, invasion, and EMT	[19]
miR-301a-3p	Esophageal squamous cell carcinoma cell	/	PTEN/PI3K/AKT	THP-1	M2 polarization	Promoting angiogenesis	[20]
miR-770	Non-small cell lung cancer cell	/	MAP3K1	THP-1	Inhibiting M2 polarization	Inhibiting tumor growth	[21]
miR-934	Colorectal cancer cell	/	PTEN/PI3K/AKT	THP-1	M2 polarization	Promoting liver metastasis	[22]
miR-940	Ovarian cancer cell	Hypoxic condition	/	U937	M2 polarization	Promoting tumor cell proliferation and migration	[23]
miR-1246	Lung tumor cell	/	/	THP-1	M2 polarization	Promoting tumor growth and anti-immune suppression	[24]
miR-1246	Glioma cell	Hypoxic condition	TERF2IP STAT3/NF- κ B	U937	M2 polarization	Facilitating immunosuppressive microenvironment formation	[25]
miR-3184-3p	Glioblastoma cell	/	RSAD2	THP-1 & PBMC	M2 polarization	Promoting tumor cell proliferation, invasion, and migration	[26]

Cargos	Donor cell	Regulation of cargos	Targets	Macrophage Cell Line	Biological function on macrophage	Biological function	Ref.
let-7a	Lung adenocarcinoma cell	Hypoxic condition	mTOR signaling pathway	THP-1	M2 polarization	Suppressing host immunity and enhancing tumor progression	[27]
let-7i-5p/miR-221-3p	Medulloblastoma cell	/	PPAR γ	Raw 264.7	M2 polarization	Closely related to tumor progression	[28]
lncARSR	Renal cell carcinoma cell	/	STAT3	THP-1	M2 polarization	Promoting tumor progression	[29]
lncRNA HCG18	Gastric cancer cell	/	miR-875-3p/KLF4	THP-1	M2 polarization	Promoting tumor development	[30]
lncRNA HLA-F-AS1	Colorectal cancer cell	/	miR-375/PFN1	THP-1	M2 polarization	Promoting tumor metastasis	[31]
lncRNA HMMR-AS1	Hepatocellular carcinoma cell	Hypoxic condition	miR-174a/ARID3A	THP-1	M2 polarization	Promoting tumor cell proliferation and tumor growth	[32]
lncRNA PART1	Hepatocellular carcinoma cell	/	miR-372-3p/TLR4	THP-1	M2 polarization	Exerting oncogenic effect	[33]
lncRNA RPPH1	Colorectal cancer cell	/	TUBB3	/	M2 polarization	Promoting tumor cell metastasis and proliferation	[34]
lncRNA TUC339	Hepatocellular carcinoma cell	/	/	THP-1 & U937	M2 polarization	/	[35]
circ_0001142	Breast cancer cell	Endoplasmic reticulum stress	circ_0001142/miR-361-3p/PIK3CB	THP-1	M2 polarization	Promoting tumor growth and liver metastasis	[36]
circ_C20orf11	Ovarian cancer cell	/	/	THP-1	M2 polarization	Enhancing DDP resistance	[37]
circNEIL3	Glioblastoma multiforme cell	EWSR1	IGF2BP3/YAP1	THP-1	M2 polarization	Promoting glioma progression	[38]
circPVT1	Lung cancer cell	/	miR-124-3p/EZH2	THP-1	M2 polarization	Promoting tumor cell proliferation, invasion and migration	[39]
circSAFB2	Renal cell carcinoma cell	/	miR-620/JAK1/STAT3	THP-1	M2 polarization	Promoting tumor progression	[40]
hsa_circ_0074854	Hepatocellular carcinoma cell	/	HuR	THP-1	Inhibiting M2 polarization	Suppressing tumor cell migration and invasion	[41]
ANXA1	Pancreatic cancer cell	/	/	THP-1	M2 polarization	Promoting tumor progression and metastasis	[42]

Cargos	Donor cell	Regulation of cargos	Targets	Macrophage Cell Line	Biological function on macrophage	Biological function	Ref.
CMTM6	Oral squamous cell carcinoma cell	/	ERK1/2	THP-1	M2 polarization	Promoting malignant progression	[43]
CXCL14	Prostate cancer cell	/	NF-κB	THP-1	M2 polarization	Promoting tumor progression	[44]
gp130	Breast cancer cell	/	gp130/STAT3	BMDM	Pro-survival phenotype	Establishing a pro-tumorigenic TME	[45]
gp130	Diffuse large B-cell lymphoma cell	/	STAT3	THP-1	M2 polarization	Reconstructing the tumor-promoting microenvironment	[46]
HSP70	Breast cancer cell	Mild hyperthermic stress	iNOS/Arg1	RAW 264.7	Mixed M1 and M2 polarization	Inducing a pro-inflammatory response in macrophages	[47]
HSP90	Metastatic oral cancer cell	CDC37/HSP90α/ HSP90β	/	THP-1	M2 polarization	/	[48]
IL-32	Esophageal squamous cell carcinoma cell	/	FAK/STAT3	/	M2 polarization	Promoting lung metastasis	[49]
PD-L1	Oral squamous cell carcinoma cell	Endoplasmic reticulum stress	/	THP-1	M2 polarization	Promoting tumor progression	[50]
PD-L1	Melanoma cell	Sulfasalazine treatment	IRF4/Egr1	RAW264.7	M2 polarization	Inducing anti-PD-1/PD-L1 therapy resistance	[51]
PEDF	Breast cancer cell	/	/	/	M1 polarization	/	[52]
PTPRO	Breast tumor cell	/	STAT3/STAT6	THP-1	M1 polarization	Suppressing tumor cell invasion and migration	[53]
THBS1	Oral squamous cell carcinoma cell	/	p38/AKT/SAPK/JNK	THP-1	M1 polarization	Promoting malignant migration	[54]
TIE2	Cervical cancer cell	/	/	THP-1	M2 polarization	Promoting angiogenesis	[55]
TIM-3	Melanoma cell	/	/	THP-1	M2 polarization	Promoting tumor cell growth and metastasis	[56]
Arachidonic acid (AA)	Pancreatic cancer cell	/	/	THP-1	M2 polarization	Promoting tumor progression	[57]

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