

Supplemental Table 1 The fibrotic modulatory effects of non-coding RNAs in myocardial infarction

Non-coding RNAs	Model in vitro/vivo	Target gene/signaling pathway	The fibrotic modulatory effects	References
MicroRNA				
miR-26a	STEMI patients, MI mouse model, OGD-treated H9C2 cells	ATM	cardiac apoptosis and fibrosis↓	(Chiang et al., 2020)
miR-26b	MI rat model, CFs	HMGA2	cardiac fibrosis↓ CFs activation ↓	(Chen et al., 2020c)
miR-27a	MI mouse model, H/R-treated H9C2 cells	GFPT2/TGF-β/smad2/3	cardiac fibrosis↓	(Tian et al., 2021)
miR-29a-3p	MI mouse model, Ang II-stimulated CFs	TGF-β, collagen I and III in CFs	cardiac fibrosis ↓ CFs proliferation and migration↓ collagen synthesis ↓ MFs generation↓	(Wang et al., 2021d)
miR-29b-3p	TGF-β1-treated CFs	FOS	cardiac fibrosis↓	(Xue et al., 2020)
miR-30d	ischemic HF model, hypoxic CFs and ventricular myocytes	MAP4K4, integrin α5	cardiac apoptosis and fibrosis↓	(Li et al., 2021d)
miR-125b-5p	MFs-restricted AMPKα1 conditional knockout mouse with MI	connexin 43	CFs proliferation and MFs content↑ connexin 43 in MFs↓	(Dufeyts et al., 2021)
miR-130a	MI mouse model, hypoxic CFs	TGF-β receptor 1/TGF-β /smad signaling pathway	cardiac fibrosis↓ CF-to-MF transformation↓	(Feng et al., 2022)
miR-132	rats with MI-induced HF, Ang II-treated CFs	PTEN /PI3K/Akt axis	cardiac fibrosis↓	(Wang et al., 2020b)
miR-145	MI model, hypoxic CFs	SOX9/Akt/GSK-3β/β-catenin	cardiac fibrosis ↓ CF proliferation, migration↓ miR-155	(Cui et al., 2021)
miR-155	hypoxic CFs	SKIV2L2/TRA2A complex /circHIF1 α /fructose metabolism	downregulation improves hypoxic injury cardiac fibrosis ↓	(Zhang et al., 2022f)
miR-210-3p	MI rat model	ADCY9	cardiac fibrosis ↓	(Wu et al., 2022d)
miR-218-5p	MI mouse model, TGF-β1-treated CFs	connexin 43	cardiac fibrosis ↓	(Sun et al., 2021a)
miR-221/222	I/R mouse model, H/R-treated H9c2 cells, conditioned medium from ADSC	miR-221/222/p38/NF-κB mediated myocardial apoptosis via PUMA/p53/BCL2 axis and regulated fibrosis via ETS-1/fibronectin/collagen 3 axis	cardiac apoptosis and fibrosis↓	(Lee et al., 2021)
circPAN3/miR-221	MI rat model, TGF-β1-treated CFs	circPAN3/miR-221/FoxO3/ATG7	cardiac fibrosis↑	(Li et al., 2020a)
miR-195	MI rat model	TGF-β1/smad	cardiac fibrosis↑	(Wang et al., 2020a)
LncRNA				
lncRNA MHRT	MI mouse model, TGF-β1-treated CFs	miR-3185	cardiac fibrosis↑	(Lang et al., 2021)
lncRNA NORAD	MI rat model, hypoxic H9C2	miR-577/COBLL1	cardiac fibrosis↑	(Xiong et al., 2021)
lncRNA TUG1	MI rat model, AngII-treated MFs	TUG1/miR-133b/CTGF	proliferation and collagen generation of MFs↑	(Zhang et al., 2021b)
lncRNA SNHG7	MI mouse model, CFs	miR-34-5p/ROCK1, miR-455-3p/PAFR	cardiac fibrosis↑	(Wang et al., 2020c)

lncRNA SAIL	MI mouse model, TGF- β 1-treated CFs	SAFB	cardiac fibrosis↓	(Luo et al., 2021)
lncRNA 00152	MI patients and mouse model, CFs	smad7	CFs proliferation, migration↑	(Song et al., 2021b)
lncRNA Ang362	MI rat model, TGF- β 1-treated CFs	smad7	cardiac fibrosis↑	(Chen et al., 2020a)
lncRNA_000898	MI mouse model, hypoxic cardiomyocytes	miR-375/PDK1	cardiac fibrosis↓	(Yan et al., 2020)

Note: ADCY9, adenylyl cyclase type 9; ADSC, adipose-derived stem cells; AMPK, adenosine monophosphate-activated protein kinase; ATG7, Autophagy Related 7; ATM, ataxia–telangiectasia mutated; α -SMA, α -smooth muscle actin; BCL2L11, Bcl-2–like protein 11; BMP2, bone morphogenetic protein 2; CPCs, cardiovascular progenitor cells; CBSC, Cortical bone stem cell; CFs, cardiac fibroblasts; FoxO3, forkhead box O-3; GFPT2, glutamine fructose-6-phosphate transaminase 2; GSK-3 β , glycogen synthase kinase 3 β ; HF, heart failure; H/R, hypoxia/reoxygenation; HUVECs, human umbilical vein endothelial cells; HMGA2, high mobility group AT-hook 2; I/R, ischemia/reperfusion; MFs, myofibroblasts; MAP4K4, mitogen-associate protein kinase 4; MHRT, myosin heavy chain associated RNA transcript; MI, myocardial infarction; STEMI, ST-segment elevation myocardial infarction; NORAD, non-coding RNA activated by DNA damage; OGD, oxygen-glucose deprivation; PAFR, platelet-activating factor receptor; PTEN, phosphatase and tensin homolog; PI3K, phosphatidylinositol 3 kinase; PUMA, p53 upregulated modulator of apoptosis; ROCK, Rho-associated, coiled-coil domain containing protein kinases; SNHG7, small nuclear RNA host gene 7; SAFB, scaffold attachment factor B; SAIL, scaffold attachment factor B interacting lncRNA; SOX9, sex-determining region Y box 9; TGF- β 1, transforming growth factor β 1; TRA2A, transformer 2 alpha; TUG1, taurine upregulation gene 1.