**Table S8. Findings of exosomal-derived ncRNAs in myocardial infarction.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Exosomal-ncRNA | Donnor cell | Target cell | Target regulation | Mechanisms | Ref |
| miR-182 | MSCs | Macrophage | TLR4 | Macrophage polarization | 1 |
| miR-214 | ADRC | CMs | N/A | Apoptosis | 2 |
| miR-23a-3p | HUCB-MSC | CMs | DMT1 | Ferroptosis | 3 |
| miR-143 | Serum | HUVECs | IGF-IR | Angiogenesis | 4 |
| miR-125b | BM-MSCs | Myocardium | p53/BAK1 | Apoptosis | 5 |
| miR-21-5p | CT | CMECs | Cdip1 | Apoptosis; Angiogenesis | 6 |
| miR-155 | M1-like macrophage | ECs | RAC1/PAK2/Sirt1/AMPKα2 | Angiogenesis | 7 |
| miR-210 | MSCs | CMs | AIFM3 | Apoptosis | 8 |
| miR-125b-5p | MSCs | NMCs | N/A | Autophagy | 9 |
| miR-153-3p | MSCs | CMs/ECs | ANGPT1 | Apoptosis; Angiogenesis | 10 |
| miR-1956 | Serum | ADMSCs | VEGF/Notch-1 | Angiogenesis | 11 |
| miR-328-3p | CMs | CMs | Caspase-3 | Apoptosis | 12 |
| miR-218-5p/  miR-363-3p | EPC | CFs | p53/JMY | Mesenchymal-endothelial transition; Fibrosis | 13 |
| miR-146a-5p | MSCs | H9c2 | IRAK1 | Hypoxia injury | 14 |
| miR-301 | BMSC | CMs | N/A | Autophagy | 15 |
| miR-338 | MSCs | H9c2 | MAP3K2/JNK | Apoptosis | 16 |
| miR-455-3p | BM-MSCs | H9c2 | MEKK1-MKK4-JNK | Apoptosis | 17 |
| miR-146a-5p | CMs | Macrophages | TRAF6 | Macrophage polarization | 18 |
| miR-126 | stem cells | Myocardium | N/A | Angiogenesis | 19 |
| miR-146a |  |  |  |  |  |
| miR-29b-3p | BMSC | Myocardium | ADAMTS16 | Angiogenesis; Ventricular remodeling | 20 |
| miR-671 | adMSCs | CMs | TGFBR2/smad2 | Phosphorylation | 21 |
| miR-144-3p | Serum | MSCs | N/A | Angiogenesis | 22 |
| miR-543 | hMSCs | CMECs | COL4A1 | Angiogenesis | 23 |
| miR-30e | BM-MSCs | H9c2 | NF-κB p65/Caspase-9 | Apoptosis; Fibrosis | 24 |
| miR-142-3p | CD4 T cells | Myocardium | APC | Fibrosis; Ventricular remodeling | 25 |
| miR-195 | CMs | Myofibroblasts | N/A | Myofibroblast Phenoconversion | 26 |
| miR-31 | ASCs | Myocardium | FIH1/HIF-1α | Angiogenesis | 27 |
| miR-92a | CMs | Myofibroblast | SMAD7 | Myofibroblast activation | 28 |
| miR-190a-3p | HCMs | EPCs | CXCR4/CXCL12 | Proliferation; Migration; Adhesion; Tube formation | 29 |
| miR-221 | cCFU-Fs | CMs | PTEN/PI3K/AKT | Apoptosis | 30 |
| miR-182-5p | MSCs | Myocardium | GSDMD | Pyroptosis | 31 |

**Table S8. Findings of exosomal-derived ncRNAs in myocardial infarction (continued).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Exosomal-ncRNA | Donnor cell | Target cell | Target regulation | Mechanisms | Ref |
| miR-132 | MSCs | HUVECs | RASA1 | Angiogenesis | 32 |
| miR-181a-5p | L-BMSC | H9c2 | ATF2 | Inflammation and Oxidative stress | 33 |
| miR-196a-5p | ASCs | Cardiac fibroblasts;  CMs; ECs | N/A | Angiogenesis; Macrophage polarization | 34 |
| miR-425-5p |  |  |  |  |  |
| miR-126-3p | Serum | HUVECs | TSC1/mTORC1/HIF-1α | Angiogenesis | 35 |
| miR-21 | MSCs | H9c2 | BTG2 | Apoptosis | 36 |
| miR-126/-130a/-210 | CDC | HUVECs | N/A | Angiogenesis | 37 |
| miR-183-5p | BMSC | CMs | FOXO1 | Apoptosis;  Oxidative stress | 38 |
| miR-24-3p | HUMSCs | Macrophage | Plcb3 | Macrophage polarization | 39 |
| has-miR-590-3p | N/A | CMs | N/A | Proliferation | 40 |
| miR-129-5p | MSCs | CMs | HMGB1 | Inflammation | 41 |
| miR-210 | MSCs | CMs/ECs | N/A | Apoptosis; Fibrosis; Angiogenesis | 42 |
| miR-133 | MSC | CMs | snail 1 | Apoptosis; Inflammation | 43 |
| miR-181b | CDC | Macrophage | Protein kinase C δ | Polarization | 44 |
| miR-21-5p | EDCSC | CMs | Akt | Endothelial tube formation;  Proliferation | 45 |
| miR-155 | Macrophages and Cardiac fibroblasts | CMs | Sevenless 1 | Proliferation;  Inflammation | 46 |
| miR-92a | Serum | CMs | integrin α5 | Angiogenesis;  Inflammation | 47 |
| miR-1208 and miR-499 | Serum | Bone marrow | CXCR4 | Progenitor cells mobilization | 48 |
| miR-30a | CMs | H9c2 | N/A | Apoptosis; Autophagy | 49 |
| miR-24 | MSC | CMs | N/A | Apoptosis | 50 |
| miR-214 | MSC | ADRC | N/A | Apoptosis | 2 |
| miR-193a-5p | Serum | HUVECs | ACVR1 | Oxidative stress | 51 |
| miR-152-3p | H9c2 | CMs | Atg12 | Apoptosis | 52 |
| let-7i-5p | H9c2 | CMs | Faslg | Apoptosis | 52 |
| miR-19a/19b | BM-MSC | HL-1 | N/A | Apoptosis;  Fibrosis | 53 |

**Table S8. Findings of exosomal-derived ncRNAs in myocardial infarction (continued).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Exosomal-ncRNA | Donnor cell | Target cell | Target regulation | Mechanisms | Ref |
| miR-146a | ADSCs | CMs | EGR1/TLR4/NFκB | Apoptosis;  Inflammation;  Fibrosis | 54 |
| miR-221-3p | MSC | CMs | PTEN/Akt | Angiogenesis;  Proliferation; Apoptosis | 55 |
| miR-126 | ADSC | CMs |  | Migration; Inflammation | 56 |
| miR-126 | NRVC | CMs | ERRFI1 | ROS accumulation | 57 |
| miR-1271-5p | Macrophages | CMs | SOX6 | Apoptosis | 58 |
| miR-143-3p | MSC | H9c2 | CHK2-Beclin2 | Apoptosis;  Autophagy | 59 |
| miR-322 | CPCs | CMs | N/A | Migration;  Angiogenesis | 60 |
| miR-133a-3p | Serum | HUVECs/H9c2 | AKT | Angiogenesis; Apoptosis; Fibrosis | 61 |
| miR‑125b‑5p | hucMSC | H9c2 | Smad7 | Apoptosis | 62 |
| miR-342-3p | Serum | H9c2 | SOX6/TFEB | Apoptosis; Autophagy | 63 |
| miR-100-5p | hucMSC | CMs | FOXO3 | Pyroptosis | 64 |
| KLF3-AS1 | hMSC | CMs | miR-138-5p/Sirt1 | Pyroptosis | 65 |
| UCA1 | hMSC | CMs | miR-873/XIAP | Apoptosis | 66 |
| H19 | MSC | CMs | miR-675/VEGF/ICAM-1 | Angiogenesis | 67 |
| HCG15 | Serum | CMs | NF-κB/p65/p38 | Apoptosis; Inflammation; Proliferation | 68 |
| NEAT1 | Serum | N/A | miR-204/MMP-9 | N/A | 69 |
| ENSRNOT00000039868 | PMNs | CMs | PDGFD | I/R injury | 70 |
| ENST00000556899.1  ENST00000575985.1 | Serum | N/A | N/A | Inflammation | 71 |
| AK139128 | Serum | N/A | N/A | Apoptosis; Proliferation | 72 |
| LINC00174 | VECs | Myocardium | SRSF1/p53 | Autophagy; Apoptosis | 73 |
| MALAT1 | Serum | cardiac myocyte | miR-92a/KLF2/CD31 | Angiogenesis | 74 |
| circHIPK3 | CMs | Endothelial cells | miR-29a/VEGFA | Proliferation | 75 |
| circSLC8A1 | HL-1 | CMs | miR-214-5p/TEAD1 | Apoptosis; Inflammation; Oxidative stress | 76 |
| circ\_0001747 | ADSCs | HL-1 | miR-199b-3p/MCL1 | Apoptosis; Inflammation; | 77 |
| circR\_0002113 | MSCs | CMs | miR-188-3p/RUNX1 | Apoptosis | 78 |

CMs: cardiomyocyte; HUCB-MSC: MSCs derived from human umbilical cord blood; DMT1: divalent metal transporter 1; CT: cardiac telocyte; CMECs: cardiac microvascular endothelial cells; M1-Exos: M1-like macrophage-derived exosomes; RAC1: Rac family small GTPase 1; PAK2: p21 (RAC1)-activated kinase 2; Sirt1: Sirtuin 1; AMPKα2: AMP-activated catalytic subunit alpha 2; NMCs: neonatal mouse cardiomyocytes; EPC: endothelial progenitor cell; TRAF6: TNF receptor-associated factor 6; adMSCs: adipose-derived MSCs; hMSCs: human mesenchymal stem cells; CMECs: cardiac microvascular endothelial cells; APC: Adenomatous Polyposis Coli; ASCs: adipose-derived stem cells; HCMs: human cardiomyocytes; cCFU-Fs: cardiac colony-forming unit fibroblasts; L-BMSC: lipopolysaccharide (LPS)-stimulated bone marrow mesenchymal stem cells; BTG2: BTG anti-proliferation factor 2; CDC: cardiosphere-derived cells; ADRC: adipose-derived regenerative cells; HUMSCs: human umbilical cord mesenchymal stem cells; PMNs: Polymorphonuclear cells; PDGFD: platelet-derived growth factor D; VECs: vascular endothelial cells.

1 Zhao, J. *et al.* Mesenchymal stromal cell-derived exosomes attenuate myocardial ischaemia-reperfusion injury through miR-182-regulated macrophage polarization. *Cardiovascular research* **115**, 1205-1216, doi:10.1093/cvr/cvz040 (2019).

2 Eguchi, S. *et al.* Cardiomyocytes capture stem cell-derived, anti-apoptotic microRNA-214 via clathrin-mediated endocytosis in acute myocardial infarction. *The Journal of biological chemistry* **294**, 11665-11674, doi:10.1074/jbc.RA119.007537 (2019).

3 Song, Y. *et al.* Human umbilical cord blood-derived MSCs exosome attenuate myocardial injury by inhibiting ferroptosis in acute myocardial infarction mice. *Cell biology and toxicology* **37**, 51-64, doi:10.1007/s10565-020-09530-8 (2021).

4 Geng, T. *et al.* Exosome Derived from Coronary Serum of Patients with Myocardial Infarction Promotes Angiogenesis Through the miRNA-143/IGF-IR Pathway. *International journal of nanomedicine* **15**, 2647-2658, doi:10.2147/ijn.S242908 (2020).

5 Zhu, L. P. *et al.* Hypoxia-elicited mesenchymal stem cell-derived exosomes facilitates cardiac repair through miR-125b-mediated prevention of cell death in myocardial infarction. *Theranostics* **8**, 6163-6177, doi:10.7150/thno.28021 (2018).

6 Liao, Z. *et al.* Cardiac telocytes inhibit cardiac microvascular endothelial cell apoptosis through exosomal miRNA-21-5p-targeted cdip1 silencing to improve angiogenesis following myocardial infarction. *Theranostics* **11**, 268-291, doi:10.7150/thno.47021 (2021).

7 Liu, S. *et al.* M1-like macrophage-derived exosomes suppress angiogenesis and exacerbate cardiac dysfunction in a myocardial infarction microenvironment. *Basic research in cardiology* **115**, 22, doi:10.1007/s00395-020-0781-7 (2020).

8 Cheng, H. *et al.* Hypoxia-challenged MSC-derived exosomes deliver miR-210 to attenuate post-infarction cardiac apoptosis. *Stem cell research & therapy* **11**, 224, doi:10.1186/s13287-020-01737-0 (2020).

9 Xiao, C. *et al.* Transplanted Mesenchymal Stem Cells Reduce Autophagic Flux in Infarcted Hearts via the Exosomal Transfer of miR-125b. *Circulation research* **123**, 564-578, doi:10.1161/circresaha.118.312758 (2018).

10 Ning, W. *et al.* Blocking exosomal miRNA-153-3p derived from bone marrow mesenchymal stem cells ameliorates hypoxia-induced myocardial and microvascular damage by targeting the ANGPT1-mediated VEGF/PI3k/Akt/eNOS pathway. *Cellular signalling* **77**, 109812, doi:10.1016/j.cellsig.2020.109812 (2021).

11 Gao, L. *et al.* Cardio-renal Exosomes in Myocardial Infarction Serum Regulate Proangiogenic Paracrine Signaling in Adipose Mesenchymal Stem Cells. *Theranostics* **10**, 1060-1073, doi:10.7150/thno.37678 (2020).

12 Huang, J. *et al.* Myocardial infarction cardiomyocytes-derived exosomal miR-328-3p promote apoptosis via Caspase signaling. *American journal of translational research* **13**, 2365-2378 (2021).

13 Ke, X. *et al.* Exosomal miR-218-5p/miR-363-3p from Endothelial Progenitor Cells Ameliorate Myocardial Infarction by Targeting the p53/JMY Signaling Pathway. *Oxidative medicine and cellular longevity* **2021**, 5529430, doi:10.1155/2021/5529430 (2021).

14 Xiong, Y. *et al.* Tongxinluo-pretreated mesenchymal stem cells facilitate cardiac repair via exosomal transfer of miR-146a-5p targeting IRAK1/NF-κB p65 pathway. *Stem cell research & therapy* **13**, 289, doi:10.1186/s13287-022-02969-y (2022).

15 Li, Y. *et al.* Exosomal miR-301 derived from mesenchymal stem cells protects myocardial infarction by inhibiting myocardial autophagy. *Biochemical and biophysical research communications* **514**, 323-328, doi:10.1016/j.bbrc.2019.04.138 (2019).

16 Fu, D. L. *et al.* MicroRNA-338 in MSCs-derived exosomes inhibits cardiomyocyte apoptosis in myocardial infarction. *European review for medical and pharmacological sciences* **24**, 10107-10117, doi:10.26355/eurrev\_202010\_23230 (2020).

17 Wang, Y. & Shen, Y. Exosomal miR-455-3p from BMMSCs prevents cardiac ischemia-reperfusion injury. *Human & experimental toxicology* **41**, 9603271221102508, doi:10.1177/09603271221102508 (2022).

18 Chen, C. *et al.* Role of Cardiomyocyte-Derived Exosomal MicroRNA-146a-5p in Macrophage Polarization and Activation. *Disease markers* **2022**, 2948578, doi:10.1155/2022/2948578 (2022).

19 Shafei, S. *et al.* Effectiveness of exosome mediated miR-126 and miR-146a delivery on cardiac tissue regeneration. *Cell and tissue research* **390**, 71-92, doi:10.1007/s00441-022-03663-4 (2022).

20 Zheng, J. *et al.* Bone Marrow Mesenchymal Stem Cell-Derived Exosomal microRNA-29b-3p Promotes Angiogenesis and Ventricular Remodeling in Rats with Myocardial Infarction by Targeting ADAMTS16. *Cardiovascular toxicology* **22**, 689-700, doi:10.1007/s12012-022-09745-7 (2022).

21 Wang, X. *et al.* Adipose-Derived Mesenchymal Stem Cells-Derived Exosomes Carry MicroRNA-671 to Alleviate Myocardial Infarction Through Inactivating the TGFBR2/Smad2 Axis. *Inflammation* **44**, 1815-1830, doi:10.1007/s10753-021-01460-9 (2021).

22 Liu, Y. *et al.* Circulating exosomal miR-144-3p inhibits the mobilization of endothelial progenitor cells post myocardial infarction via regulating the MMP9 pathway. *Aging* **12**, 16294-16303, doi:10.18632/aging.103651 (2020).

23 Yang, M. *et al.* miR-543 in human mesenchymal stem cell-derived exosomes promotes cardiac microvascular endothelial cell angiogenesis after myocardial infarction through COL4A1. *IUBMB life* **73**, 927-940, doi:10.1002/iub.2474 (2021).

24 Pu, L., Kong, X., Li, H. & He, X. Exosomes released from mesenchymal stem cells overexpressing microRNA-30e ameliorate heart failure in rats with myocardial infarction. *American journal of translational research* **13**, 4007-4025 (2021).

25 Cai, L. *et al.* Activated CD4(+) T cells-derived exosomal miR-142-3p boosts post-ischemic ventricular remodeling by activating myofibroblast. *Aging* **12**, 7380-7396, doi:10.18632/aging.103084 (2020).

26 Morelli, M. B., Shu, J., Sardu, C., Matarese, A. & Santulli, G. Cardiosomal microRNAs Are Essential in Post-Infarction Myofibroblast Phenoconversion. *International journal of molecular sciences* **21**, doi:10.3390/ijms21010201 (2019).

27 Zhu, D. *et al.* Exosomes from adipose-derived stem cells alleviate myocardial infarction via microRNA-31/FIH1/HIF-1α pathway. *J Mol Cell Cardiol* **162**, 10-19, doi:10.1016/j.yjmcc.2021.08.010 (2022).

28 Wang, X., Morelli, M. B., Matarese, A., Sardu, C. & Santulli, G. Cardiomyocyte-derived exosomal microRNA-92a mediates post-ischemic myofibroblast activation both in vitro and ex vivo. *ESC heart failure* **7**, 284-288, doi:10.1002/ehf2.12584 (2020).

29 Jiang, C. Y. *et al.* The potential role of circulating exosomes in protecting myocardial injury in acute myocardial infarction via regulating miR-190a-3p/CXCR4/CXCL12 pathway. *Journal of bioenergetics and biomembranes* **54**, 175-189, doi:10.1007/s10863-022-09944-5 (2022).

30 Hao, C. *et al.* Overexpression of GATA4 enhances the antiapoptotic effect of exosomes secreted from cardiac colony-forming unit fibroblasts via miRNA221-mediated targeting of the PTEN/PI3K/AKT signaling pathway. *Stem cell research & therapy* **11**, 251, doi:10.1186/s13287-020-01759-8 (2020).

31 Yue, R. *et al.* Mesenchymal stem cell-derived exosomal microRNA-182-5p alleviates myocardial ischemia/reperfusion injury by targeting GSDMD in mice. *Cell death discovery* **8**, 202, doi:10.1038/s41420-022-00909-6 (2022).

32 Ma, T. *et al.* MicroRNA-132, Delivered by Mesenchymal Stem Cell-Derived Exosomes, Promote Angiogenesis in Myocardial Infarction. *Stem cells international* **2018**, 3290372, doi:10.1155/2018/3290372 (2018).

33 Liu, H. Y. *et al.* Lipopolysaccharide-stimulated bone marrow mesenchymal stem cells-derived exosomes inhibit H2O2-induced cardiomyocyte inflammation and oxidative stress via regulating miR-181a-5p/ATF2 axis. *European review for medical and pharmacological sciences* **24**, 10069-10077, doi:10.26355/eurrev\_202010\_23224 (2020).

34 de Almeida Oliveira, N. C. *et al.* Multicellular regulation of miR-196a-5p and miR-425-5 from adipose stem cell-derived exosomes and cardiac repair. *Clinical science (London, England : 1979)* **136**, 1281-1301, doi:10.1042/cs20220216 (2022).

35 Duan, S. *et al.* Peripheral Serum Exosomes Isolated from Patients with Acute Myocardial Infarction Promote Endothelial Cell Angiogenesis via the miR-126-3p/TSC1/mTORC1/HIF-1α Pathway. *International journal of nanomedicine* **17**, 1577-1592, doi:10.2147/ijn.S338937 (2022).

36 Zhang, J. *et al.* IFN-γ enhances the efficacy of mesenchymal stromal cell-derived exosomes via miR-21 in myocardial infarction rats. *Stem cell research & therapy* **13**, 333, doi:10.1186/s13287-022-02984-z (2022).

37 Namazi, H. *et al.* Exosomes secreted by hypoxic cardiosphere-derived cells enhance tube formation and increase pro-angiogenic miRNA. *Journal of cellular biochemistry* **119**, 4150-4160, doi:10.1002/jcb.26621 (2018).

38 Mao, S., Zhao, J., Zhang, Z. J. & Zhao, Q. MiR-183-5p overexpression in bone mesenchymal stem cell-derived exosomes protects against myocardial ischemia/reperfusion injury by targeting FOXO1. *Immunobiology* **227**, 152204, doi:10.1016/j.imbio.2022.152204 (2022).

39 Zhu, F. *et al.* Human Umbilical Cord Mesenchymal Stem Cell-Derived Exosomes Attenuate Myocardial Infarction Injury via miR-24-3p-Promoted M2 Macrophage Polarization. *Advanced biology* **6**, e2200074, doi:10.1002/adbi.202200074 (2022).

40 Wang, Y. *et al.* Rapid Delivery of Hsa-miR-590-3p Using Targeted Exosomes to Treat Acute Myocardial Infarction Through Regulation of the Cell Cycle. *Journal of biomedical nanotechnology* **14**, 968-977, doi:10.1166/jbn.2018.2493 (2018).

41 Wang, S. *et al.* Exosomes derived from miR-129-5p modified bone marrow mesenchymal stem cells represses ventricular remolding of mice with myocardial infarction. *Journal of tissue engineering and regenerative medicine* **16**, 177-187, doi:10.1002/term.3268 (2022).

42 Zhu, J. *et al.* Myocardial reparative functions of exosomes from mesenchymal stem cells are enhanced by hypoxia treatment of the cells via transferring microRNA-210 in an nSMase2-dependent way. *Artificial cells, nanomedicine, and biotechnology* **46**, 1659-1670, doi:10.1080/21691401.2017.1388249 (2018).

43 Chen, Y. *et al.* MicroRNA-133 overexpression promotes the therapeutic efficacy of mesenchymal stem cells on acute myocardial infarction. *Stem Cell Res Ther* **8**, 268, doi:10.1186/s13287-017-0722-z (2017).

44 de Couto, G. *et al.* Exosomal MicroRNA Transfer Into Macrophages Mediates Cellular Postconditioning. *Circulation* **136**, 200-214, doi:10.1161/CIRCULATIONAHA.116.024590 (2017).

45 Qiao, L. *et al.* microRNA-21-5p dysregulation in exosomes derived from heart failure patients impairs regenerative potential. *J Clin Invest* **129**, 2237-2250, doi:10.1172/JCI123135 (2019).

46 Wang, C. *et al.* Macrophage-Derived mir-155-Containing Exosomes Suppress Fibroblast Proliferation and Promote Fibroblast Inflammation during Cardiac Injury. *Molecular therapy : the journal of the American Society of Gene Therapy* **25**, 192-204, doi:10.1016/j.ymthe.2016.09.001 (2017).

47 Hinkel, R. *et al.* Inhibition of microRNA-92a protects against ischemia/reperfusion injury in a large-animal model. *Circulation* **128**, 1066-1075, doi:10.1161/CIRCULATIONAHA.113.001904 (2013).

48 Cheng, M. *et al.* Circulating myocardial microRNAs from infarcted hearts are carried in exosomes and mobilise bone marrow progenitor cells. *Nature communications* **10**, 959, doi:10.1038/s41467-019-08895-7 (2019).

49 Zhang, C., Gan, X., Liang, R. & Jian, J. Exosomes Derived From Epigallocatechin Gallate-Treated Cardiomyocytes Attenuated Acute Myocardial Infarction by Modulating MicroRNA-30a. *Frontiers in pharmacology* **11**, 126, doi:10.3389/fphar.2020.00126 (2020).

50 Zhang, C. S., Shao, K., Liu, C. W., Li, C. J. & Yu, B. T. Hypoxic preconditioning BMSCs-exosomes inhibit cardiomyocyte apoptosis after acute myocardial infarction by upregulating microRNA-24. *European review for medical and pharmacological sciences* **23**, 6691-6699, doi:10.26355/eurrev\_201908\_18560 (2019).

51 Cao, C. *et al.* Circulating exosomes repair endothelial cell damage by delivering miR-193a-5p. *Journal of cellular and molecular medicine* **25**, 2176-2189, doi:10.1111/jcmm.16202 (2021).

52 Zhang, J. *et al.* Overexpression of Exosomal Cardioprotective miRNAs Mitigates Hypoxia-Induced H9c2 Cells Apoptosis. *International journal of molecular sciences* **18**, doi:10.3390/ijms18040711 (2017).

53 Wang, S., Li, L., Liu, T., Jiang, W. & Hu, X. miR-19a/19b-loaded exosomes in combination with mesenchymal stem cell transplantation in a preclinical model of myocardial infarction. *Regen Med* **15**, 1749-1759, doi:10.2217/rme-2019-0136 (2020).

54 Pan, J., Alimujiang, M., Chen, Q., Shi, H. & Luo, X. Exosomes derived from miR-146a-modified adipose-derived stem cells attenuate acute myocardial infarction-induced myocardial damage via downregulation of early growth response factor 1. *Journal of cellular biochemistry* **120**, 4433-4443, doi:10.1002/jcb.27731 (2019).

55 Sun, L. *et al.* Down-Regulated Exosomal MicroRNA-221 - 3p Derived From Senescent Mesenchymal Stem Cells Impairs Heart Repair. *Front Cell Dev Biol* **8**, 263, doi:10.3389/fcell.2020.00263 (2020).

56 Luo, Q. *et al.* Exosomes from MiR-126-Overexpressing Adscs Are Therapeutic in Relieving Acute Myocardial Ischaemic Injury. *Cellular physiology and biochemistry : international journal of experimental cellular physiology, biochemistry, and pharmacology* **44**, 2105-2116, doi:10.1159/000485949 (2017).

57 Wang, W. *et al.* Exosomes derived miR-126 attenuates oxidative stress and apoptosis from ischemia and reperfusion injury by targeting ERRFI1. *Gene* **690**, 75-80, doi:10.1016/j.gene.2018.12.044 (2019).

58 Long, R. *et al.* M2 macrophage-derived exosomes carry miR-1271-5p to alleviate cardiac injury in acute myocardial infarction through down-regulating SOX6. *Molecular immunology* **136**, 26-35, doi:10.1016/j.molimm.2021.05.006 (2021).

59 Chen, G., Wang, M., Ruan, Z., Zhu, L. & Tang, C. Mesenchymal stem cell-derived exosomal miR-143-3p suppresses myocardial ischemia-reperfusion injury by regulating autophagy. *Life sciences* **280**, 119742, doi:10.1016/j.lfs.2021.119742 (2021).

60 Youn, S. W. *et al.* Modification of Cardiac Progenitor Cell-Derived Exosomes by miR-322 Provides Protection against Myocardial Infarction through Nox2-Dependent Angiogenesis. *Antioxidants (Basel)* **8**, doi:10.3390/antiox8010018 (2019).

61 Zhu, W. *et al.* Macrophage migration inhibitory factor facilitates the therapeutic efficacy of mesenchymal stem cells derived exosomes in acute myocardial infarction through upregulating miR-133a-3p. *J Nanobiotechnology* **19**, 61, doi:10.1186/s12951-021-00808-5 (2021).

62 Wang, X. L. *et al.* Exosomes derived from human umbilical cord mesenchymal stem cells improve myocardial repair via upregulation of Smad7. *International journal of molecular medicine* **41**, 3063-3072, doi:10.3892/ijmm.2018.3496 (2018).

63 Wang, B. *et al.* Dysregulation of miR-342-3p in plasma exosomes derived from convalescent AMI patients and its consequences on cardiac repair. *Biomedicine & pharmacotherapy = Biomedecine & pharmacotherapie* **142**, 112056, doi:10.1016/j.biopha.2021.112056 (2021).

64 Liang, C. *et al.* Exosomes of Human Umbilical Cord MSCs Protect Against Hypoxia/Reoxygenation-Induced Pyroptosis of Cardiomyocytes via the miRNA-100-5p/FOXO3/NLRP3 Pathway. *Front Bioeng Biotechnol* **8**, 615850, doi:10.3389/fbioe.2020.615850 (2020).

65 Mao, Q., Liang, X. L., Zhang, C. L., Pang, Y. H. & Lu, Y. X. LncRNA KLF3-AS1 in human mesenchymal stem cell-derived exosomes ameliorates pyroptosis of cardiomyocytes and myocardial infarction through miR-138-5p/Sirt1 axis. *Stem cell research & therapy* **10**, 393, doi:10.1186/s13287-019-1522-4 (2019).

66 Sun, L. *et al.* Long noncoding RNA UCA1 from hypoxia-conditioned hMSC-derived exosomes: a novel molecular target for cardioprotection through miR-873-5p/XIAP axis. *Cell Death Dis* **11**, 696, doi:10.1038/s41419-020-02783-5 (2020).

67 Huang, P. *et al.* Atorvastatin enhances the therapeutic efficacy of mesenchymal stem cells-derived exosomes in acute myocardial infarction via up-regulating long non-coding RNA H19. *Cardiovasc Res* **116**, 353-367, doi:10.1093/cvr/cvz139 (2020).

68 Lin, B. *et al.* Loss of exosomal LncRNA HCG15 prevents acute myocardial ischemic injury through the NF-κB/p65 and p38 pathways. *Cell death & disease* **12**, 1007, doi:10.1038/s41419-021-04281-8 (2021).

69 Chen, Z. *et al.* Expression level and diagnostic value of exosomal NEAT1/miR-204/MMP-9 in acute ST-segment elevation myocardial infarction. *IUBMB life* **72**, 2499-2507, doi:10.1002/iub.2376 (2020).

70 Zhai, T. Y. *et al.* Exosomes Released from CaSR-Stimulated PMNs Reduce Ischaemia/Reperfusion Injury. *Oxidative medicine and cellular longevity* **2021**, 3010548, doi:10.1155/2021/3010548 (2021).

71 Zheng, M. L. *et al.* Circulating exosomal long non-coding RNAs in patients with acute myocardial infarction. *Journal of cellular and molecular medicine* **24**, 9388-9396, doi:10.1111/jcmm.15589 (2020).

72 Wang, L. & Zhang, J. Exosomal lncRNA AK139128 Derived from Hypoxic Cardiomyocytes Promotes Apoptosis and Inhibits Cell Proliferation in Cardiac Fibroblasts. *International journal of nanomedicine* **15**, 3363-3376, doi:10.2147/IJN.S240660 (2020).

73 Su, Q. *et al.* Exosomal LINC00174 derived from vascular endothelial cells attenuates myocardial I/R injury via p53-mediated autophagy and apoptosis. *Molecular therapy. Nucleic acids* **23**, 1304-1322, doi:10.1016/j.omtn.2021.02.005 (2021).

74 Shyu, K. G., Wang, B. W., Fang, W. J., Pan, C. M. & Lin, C. M. Hyperbaric oxygen-induced long non-coding RNA MALAT1 exosomes suppress MicroRNA-92a expression in a rat model of acute myocardial infarction. *Journal of cellular and molecular medicine* **24**, 12945-12954, doi:10.1111/jcmm.15889 (2020).

75 Wang, Y. *et al.* Exosomal CircHIPK3 Released from Hypoxia-Induced Cardiomyocytes Regulates Cardiac Angiogenesis after Myocardial Infarction. *Oxidative medicine and cellular longevity* **2020**, 8418407, doi:10.1155/2020/8418407 (2020).

76 Lan, Z., Wang, T., Zhang, L., Jiang, Z. & Zou, X. CircSLC8A1 Exacerbates Hypoxia-Induced Myocardial Injury via Interacting with MiR-214-5p to Upregulate TEAD1 Expression. *International heart journal* **63**, 591-601, doi:10.1536/ihj.21-547 (2022).

77 Zhou, D., Dai, Z., Ren, M. & Yang, M. Adipose-Derived Stem Cells-Derived Exosomes with High Amounts of Circ\_0001747 Alleviate Hypoxia/Reoxygenation-Induced Injury in Myocardial Cells by Targeting MiR-199b-3p/MCL1 Axis. *International heart journal* **63**, 356-366, doi:10.1536/ihj.21-441 (2022).

78 Tian, T. *et al.* Therapeutic Potential of Exosomes Derived From circRNA\_0002113 Lacking Mesenchymal Stem Cells in Myocardial Infarction. *Frontiers in cell and developmental biology* **9**, 779524, doi:10.3389/fcell.2021.779524 (2021).