**Table S1. Findings of miRNAs in myocardial infarction.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| miRNAs | Expression | Species/Cell | Target regulation | Mechanisms | Ref. |
| miR-15b-5p | Upregulated | H9c2 | SIRT3/NLRP3 | Pyroptosis | 1 |
| miR-223-3p | Downregulated | Rat | FBXW7 | Inflammation; Apoptosis | 2 |
| miR-29 | Downregulated | Mouse | PI3K/mTOR/HIF1α/VEGF | Angiogenesis; Fibrosis | 3 |
| miR-124-3p | Upregulated | Rat | PTEN/P13K/AKT | Oxidative stress | 4 |
| miR-18-5p | Downregulated | H9c2 | RUNX1 | Oxidative stress; Apoptosis | 5 |
| miR-34a | Upregulated | Rat | SIRT1 | Apoptosis | 6 |
| miR-34-5p | Downregulated | Mouse | ROCK1 | Proliferation; Fibrosis | 7 |
| miR-455-5p | Downregulated | CMs | SOCS3 | Apoptosis | 8 |
| miR-411 | Upregulated | NRCMs | Hippo/YAP | Cardiomyocyte regeneration | 9 |
| miR-615-3p | Downregulated | HCMs | MEF2A | Oxidative stress; Apoptosis | 10 |
| miR-488-3p | Downregulated | Mouse | ZNF791 | Apoptosis | 11 |
| miR-23a | Downregulated | Human/H9c2 | PTEN | Oxidative stress;  Apoptosis | 12 |
| miR-214 | Upregulated | Mouse | Bcl2l11 & Slc8a1 | Apoptosis | 13 |
| miR-155 | Upregulated | Mouse | Sos1 | Proliferation; Inflammation | 14 |
| miR-21 | Upregulated | Human | JNK/p38/caspase-3/TNF-α | Apoptosis | 15 |
| miR-145 | Downregulated | Rat | Akt3/mTOR | Apoptosis | 16 |
| miR-155 | Upregulated | Mouse | QKI protein | Apoptosis | 17 |
| miR-210 | Upregulated | Rat | HGF | Angiogenesis | 18 |
| miR-23a & miR-92a | Upregulated | Rat | Smad7 | Apoptosis | 19 |
| miR-126 | Upregulated | Mouse | ERK/VEGF | Angiogenesis | 20 |
| miR-182 | Upregulated | Mouse | TLR4/NF-κB/  PI3K/Akt | Macrophage polarization | 21 |
| miR-762 | Upregulated | Mouse | ND2 | Mitochondrial function; Apoptosis | 22 |
| miR-103/107 | Upregulated | Mouse | FADD | Necrosis | 23 |
| miR-181a | Upregulated | Mouse | Aldo–MR/  Adamts1/Ngal | Cardiac remodelling | 24 |
| miR-132 | Upregulated | Mouse | RASA1 | Angiogenesis | 25 |
| miR-144 | Downregulated | Mouse | mTOR/P62 | Cardiac remodelling;  Autophagy; Fibrosis;  Inflammation; and Apoptosis | 26 |
| miR-494 | Downregulated | Rat | WNT/LRG1 | Proliferation; Migration; and Invasion | 27 |

**Table S1. Findings of miRNAs in myocardial infarction (Continued).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| miRNAs | Expression | Species/Cell | Target regulation | Mechanisms | Ref. |
| miR-133 | Downregulated | Mouse | N/A | N/A | 28 |
| miR-214 | Upregulated | Human | PUMA/PTEN/Bax/  Caspase 7 | Apoptosis | 29 |
| miR-133a | Downregulated | Rat | TGF-β1 & CTGF | Fibrosis | 30 |
| miR-125 | Upregulated | Mouse | FIH & XIRP1 | N/A | 31 |
| miR-101 | Downregulated | Mouse | DDIT4 | Autophagy | 32 |
| miR-29b | Downregulated | Rat | Notch1 | Apoptosis;  Cardiac hypertrophy; | 33 |
| miR-325-3p | Downregulated | Mouse | RIPK3 | Necrosis | 34 |
| miR-7-5p | Downregulated | H9c2/Rat | RARP1/caspase-3 | Proliferation; Apoptosis | 35 |
| miR-421 | Downregulated | N/A | PINK1 | Apoptosis | 36 |
| miR-26b | Downregulated | Mouse | PTGS2 | Inflammation; Fibrosis; Apoptosis | 37 |
| miR-29b-3p | Downregulated | Rat | PI3K | Inflammation; Apoptosis | 38 |
| miR-297a | Upregulated | H9c2 | CGRP | Apoptosis | 39 |
| miR-30b-5p | Upregulated | Rat/H9c2 | CSE | Apoptosis; Endogenous H2S | 40 |
| miR-137 | Downregulated | Human | Serpina3 | Apoptosis; Fibrosis | 41 |
| miR-30a | Downregulated | H9c2 | Beclin-1/LC3-II | Autophagy | 42 |
| miR-532-5p | Downregulated | H9c2 | PI3K/AKT | Apoptosis | 43 |
| miR-125b-5p | Downregulated | Rat | HL-1/NLRC5 | Apoptosis | 44 |
| miR-142-3p | Downregulated | Mouse | HMGB1/Rac1 | Apoptosis; Autophagy | 45 |
| miR-132-3p | Downregulated | Mouse | HDAC3 | Oxidative stress; Apoptosis | 46 |
| miR-9 | Downregulated | Mouse | KLF5 | Apoptosis | 47 |
| miR-519d-3p | Upregulated | Rat | N/A | Apoptosis | 48 |
| miR-130a-3p | Downregulated | Mouse | N/A | Proliferation; Apoptosis | 49 |
| miR-27a-3p | Downregulated | HCM | TGFBR1 | Proliferation; Apoptosis | 50 |
| miR-193b | Downregulated | Mouse | MAML1 | Apoptosis | 51 |
| miR-202-5p | Downregulated | Rat | Trpv2 | Oxidative stress;  Ca2+ overload | 52 |
| miR-133 | Downregulated | H9c2 | N/A | Apoptosis; Proliferation | 53 |
| miR-327 | Upregulated | H9c2/Rat | ARC | Apoptosis | 54 |
| miR-451 | Downregulated | H9c2/Rat | HMGB1 | Apoptosis | 55 |
| miR-30a | Upregulated | Rat | Beclin-1 | Apoptosis | 56 |
| miR-495-3p | Downregulated | Mouse/H9c2 | MAPK6 | Proliferation | 57 |
| miR-30c-5p | Downregulated | Rat | N/A | Oxidative stress; Apoptosis | 58 |
| miR-421 | Upregulated | H9c2 | Sirt3 | Oxidative stress; Apoptosis | 59 |

**Table S1. Findings of miRNAs in myocardial infarction (Continued).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| miRNAs | Expression | Species/Cell | Target regulation | Mechanisms | Ref. |
| miR-421 | Downregulated | Rat | TLR4 | Inflammation; Apoptosis | 60 |
| miR-374a-5p | Downregulated | H9c2/mouse | MAPK6 | Apoptosis | 61 |
| miR-140 | Downregulated | Mouse | YES1 | Apoptosis | 62 |
| miR-140 | Downregulated | Rat | NF-κB | Inflammation; Apoptosis | 63 |
| miR-140-3p | Downregulated | Mouse/HUVECs | HIF-1α/VEGF | Proliferation, Tube formation; Cell migration | 64 |
| miR-214-5p | Downregulated | H9c2 | FASLG | Apoptosis | 65 |
| miR-138 | Downregulated | Mouse | HIF1-α | Mitochondrial Apoptosis | 66 |
| miR-135a | Downregulated | Rat/H9c2 | PTP1B | Apoptosis | 67 |
| miR-34a-5p | Upregulated | Rat | Notch receptor 1 | Proliferation; Apoptosis; Oxidative stress | 68 |
| miR-214-5p | Downregulated | H9c2 | FASLG | Apoptosis | 65 |
| miR-138 | Downregulated | Mouse | HIF1-α | Mitochondrial Apoptosis | 66 |
| miR-135a | Downregulated | Rat/H9c2 | PTP1B | Apoptosis | 67 |
| miR-34a-5p | Upregulated | Rat | Notch receptor 1 | Proliferation; Apoptosis; Oxidative stress | 68 |
| miR-155 | Upregulated | Rat/H9c2 | HIF-1α | Apoptosis | 69 |
| miR-181a | Downregulated | Rat/H9c2 | Akt | Apoptosis | 70 |
| miR-145 | Downregulated | Rat | CaMKII | Apoptosis; Inflammation and Oxidative stress | 71 |
| miR-29a | Downregulated | Mouse/H9c2 | SIRT1 | Oxidative stress; Pyroptosis | 72 |
| miR-183-5p | Downregulated | Rat/H9c2 | VDAC1 | Apoptosis | 73 |
| miR-128-1-5p | Downregulated | Mouse/H9c2 | Gadd45g | Apoptosis | 74 |
| miR-342-5p | Downregulated | H9c2 | GPRC5A | Apoptosis | 75 |
| miR-17-3p | Upregulated | H9c2 | N/A | Autophagy; Apoptosis | 76 |
| miR-193a | Downregulated | H9c2 | N/A | Apoptosis | 77 |
| miR-181b-5p | Upregulated | Rat | AKT3/PIK3R3 | Apoptosis | 78 |
| miR-330 | Upregulated | Mouse | SRY | Ventricular remodeling | 79 |
| miR-433 | Upregulated | Mouse | NDRG4 | Apoptosis | 80 |
| miR-2861  miR-5115 | Upregulated | Mouse | GPR30 | Apoptosis | 81 |
| miR-346 | Downregulated | Rat | Bax | Apoptosis | 82 |

**Table S1. Findings of miRNAs in myocardial infarction (Continued).**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| miRNAs | Expression | Species/Cell | Target regulation | Mechanisms | Ref. |
| miR-202-3p | Downregulated | Rat | TRPM6 | Oxidative stress; Inflammation;  Apoptosis | 83 |
| miR-217 | Upregulated | Mouse/H9c2 | DUSP14 | N/A | 84 |
| miR-129-5p | Downregulated | Rat | HMGB1 | Apoptosis | 85 |
| miR-219a-2 | Downregulated | Mouse | HIF1α | Ca2+ overload; Apoptosis | 86 |
| miR-15b-5p | Upregulated | Mouse | KCNJ2 | Arrhythmia; Apoptosis | 87 |
| miR-483-3p | Upregulated | H9c2 | MDM4 | Apoptosis | 88 |
| miR-377-5p | Upregulated | Rat | NLRP3/Caspase-1/IL-1β | Apoptosis; Inflammation | 89 |
| miR-29b | Upregulated | Rat | FoxO3a | Pyroptosis | 90 |
| miR-30c-5p | Upregulated | Rat | SIRT1 | Inflammation; Apoptosis | 91 |
| miR-302a-3p | Upregulated | Mouse | FOXO3 | Apoptosis; Mitophagy;  Oxidative stress | 92 |
| miR-328 | Upregulated | Rat | N/A | Apoptosis | 93 |
| miR-25 | Downregulated | Rat | HMGB1 | Apoptosis | 94 |
| miR-760 | Upregulated | Rat | DUSP1 | Apoptosis | 95 |
| miR-181c-5p | Upregulated | Human/H9c2 | PTPN4 | Apoptosis | 96 |
| miR-199a-5p | Upregulated | Human/H9c2 | HIF-1α | Apoptosis | 97 |
| miR-155 | Upregulated | H9c2 | BAG5 | Apoptosis | 98 |
| miR-21 | Upregulated | H9c2 | N/A | Oxidative stress; Apoptosis | 99 |

Abbreviation: ZNF791：zinc finger 791; PTEN: phosphatase and tensin homolog; Sos1: The Son of Sevenless gene; Quaking: RNA-binding protein Quaking; HGF: hepatocyte growth factor; Smad7: *SMAD family member 7;* ND2: NADH dehydrogenase subunit 2; IGF-IR: insulin-like growth factor 1 receptor; FADD: Fas-associated protein with death domain; RASA1: Ras p21 protein activator 1; PUMA: p53-upregulated modulator of apoptosis; CTGF: connective tissue growth factor; FIH: factor inhibiting hypoxia-inducible factor; XIRP1: Xin actin-binding repeat-containing protein 1; DDIT4: DNA damage-inducible transcript 4; PTGS2: prostaglandin-endoperoxide synthase 2; RIPK3: Receptor-interacting serine-threonine kinase 3; PARP1: poly(ADP-ribose) polymerase 1; SOCS2: suppressor of cytokine signaling 2; PINK1: PTEN induced putative kinase 1; PI3K: p85a; CGRP: Calcitonin gene related peptide; CSE: cystathionine-γ-lyase; NLRC5: nucleotide binding and oligomerization domain-like receptor C5; HMGB1: high mobility group box 1 protein; Rac1: Ras-related C3 botulinum toxin substrate 1; HDAC3: histone deacetylase 3; KLF5: Krüppel-like factor 5; TGFBR1: Transforming growth factor beta receptor 1; MAML1: mastermind-like 1; ARC: apoptosis repressor with caspase recruitment domain; Sirt3: Sirtuin-3; TLR4: toll-like receptor-4; ABCA1: ATP-binding cassette transporter 1; YES: YES proto-oncogene 1; DTNA: dystrobrevin alpha; FASLG: Fas ligand; PLIN5: perilipin-5; PTP1B: protein tyrosine phosphatase 1B; CaMKII: Ca2+/calmodulin-dependent protein kinase II; RyR2: ryanodine receptor2; ASK1: apoptosis signal-regulating kinase 1; SIRT1: silent information regulator factor 2-related enzyme 1; VDAC1: voltage-dependent anion channel 1; Gadd45g: growth arrest DNA damage-inducible gene 45 gamma; GPRC5A: G protein-coupled receptor, family C, group 5, member A; PIK3R3: phosphoinositde 3‐kinase; SRY: sex-determining region Y; NDRG4: N-Myc downstream-regulated gene 4; GPR30: G protein‐coupled receptor 30; TRPM6: transient receptor potential cation channel, subfamily M, member 6; DUSP14: dual specificity protein phosphatase 14; MDM4: Murine double minute 4; Cotl1: coactosin-like protein-1; DUSP1: dual-specificity protein phosphatase 1; PTPN4: protein tyrosine phosphatase nonreceptor type 4; BAG5: BAG family molecular chaperone regulator 5; SOCS3: Cytokine Signaling-3; HCMs: human cardiomyocytes;N/A: Not application.

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