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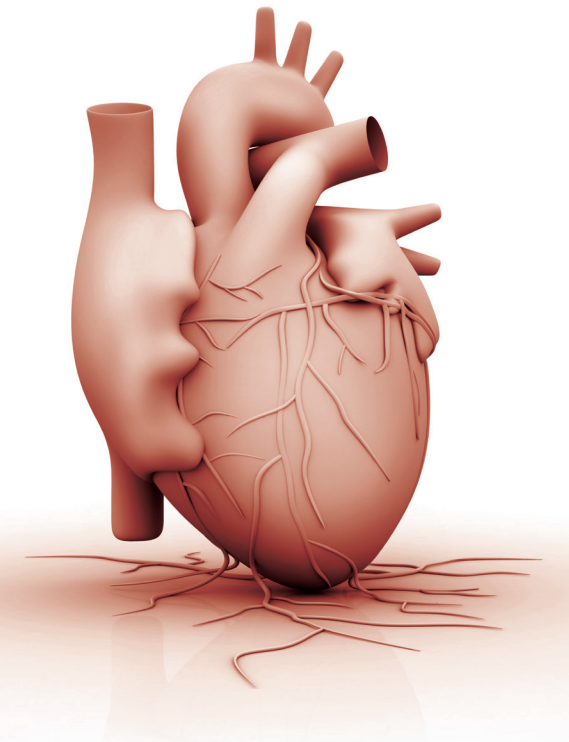
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miREIA miRNA Enzyme Immunoassay



microRNAs for Diagnostics in Cardiovascular Disease

microRNAs (miRNAs) are a class of single-stranded non-coding RNA molecules with a length of 19-23 nucleotides. They play a role in negative post-transcriptional regulation by binding to complementary sequences on mRNA and blocking translation into protein. miRNA not only regulate functions in the healthy heart but also play a role in mechanisms of cardiovascular disease.

miRNA can be released into biological fluids, including blood, from dying cells, such as necrotic cardiomyocytes following AMI, or actively secreted from living cells under stimulation.

miRNA show a high degree of stability in circulation and withstand conditions such as long-term storage, multiple freeze/thaw cycles and different pH, which makes them ideal biomarkers.



QUANTITATIVE

- Sensitive
- Absolute quantification



ROBUST

- ELISA platform
- No reverse transcription
- No amplification



FAST

- 2-hours assay



AFFORDABLE

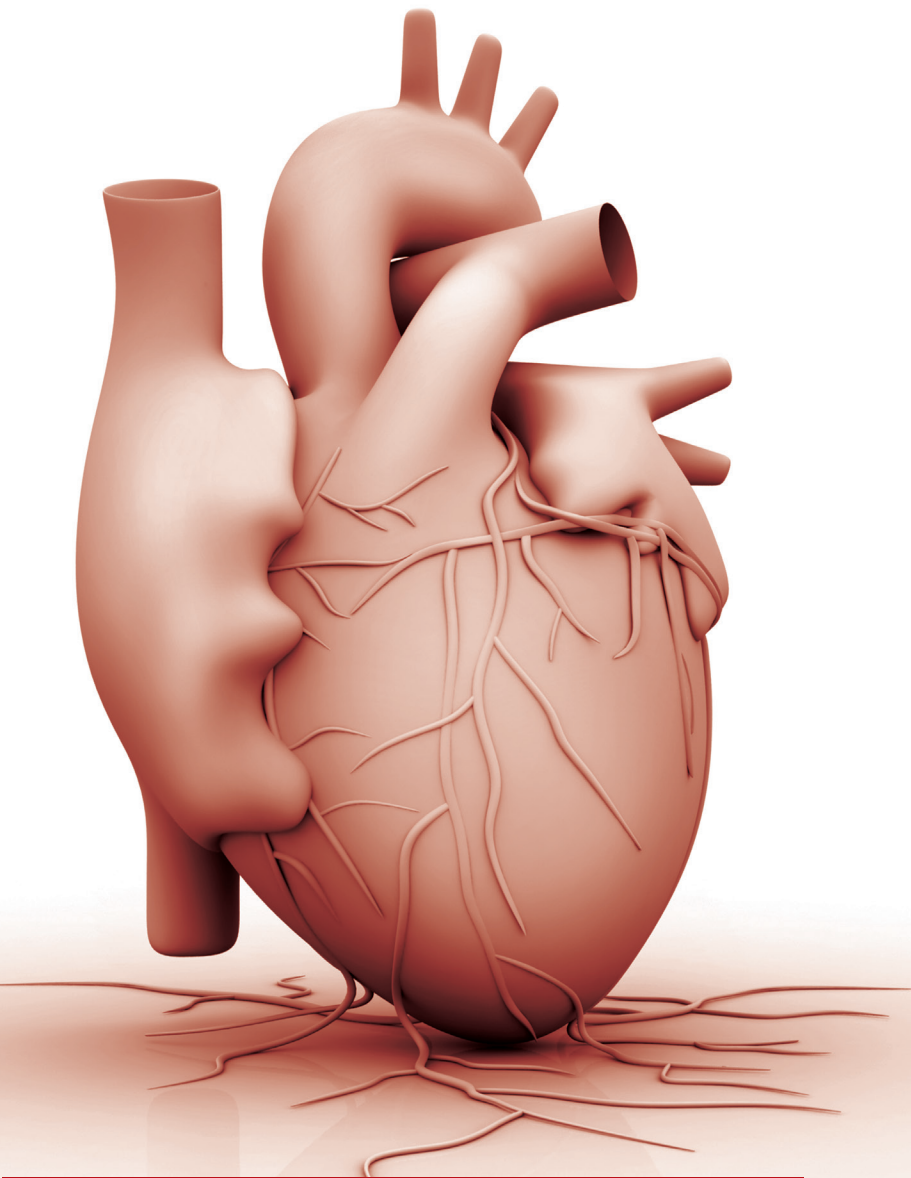
- Low cost per sample
- No special equipment

Circulating microRNAs associated with the diagnosis of various CVDs

Chronic heart failure			
miRNA	Direction of alteration	Value of biomarker	References
miR-22	Increased	Diagnostic	5
miR-30c	Decreased	Diagnostic	6
miR-92b	Increased	Diagnostic	5
miR-107	Decreased	Diagnostic	7
miR-122	Increased	Diagnostic	8
miR-126	Increased	Prognostic	11
miR-139	Decreased	Diagnostic	7
miR-142-5p	Decreased	Diagnostic	7
miR-146a	Decreased	Diagnostic	6
miR-183-3p	Decreased	Diagnostic	9
miR-190a	Decreased	Diagnostic	9
miR-193b-3p	Decreased	Diagnostic	9
miR-193b-5p	Decreased	Diagnostic	9
miR-203	Decreased	Diagnostic	10
miR-210	Increased	Diagnostic	10
miR-211-5p	Decreased	Diagnostic	9
miR-221	Decreased	Diagnostic	6
miR-320a	Increased	Diagnostic	5
miR-328	Decreased	Diagnostic	6
miR-375	Decreased	Diagnostic	6
	Increased	Diagnostic	10
miR-423-5p	Increased	Diagnostic	5
miR-494	Decreased	Diagnostic	9
miR-508-5p	Increased	Prognostic	11
miR-520d-5p	Increased	Diagnostic	8
miR-558	Decreased	Diagnostic	8
miR-671-5p	Increased	Diagnostic	9
miR-1180	Increased	Diagnostic	10
miR-1233	Increased	Diagnostic	9
miR-1908	Increased	Diagnostic	10

Coronary artery disease			
miRNA	Direction of alteration compared with controls	Value of biomarker	References
miR-17	Decreased	Diagnostics	31
miR-19a	Decreased	Diagnostics	32
miR-29a	Decreased	Diagnostics	32
miR-30e-5p	Decreased	Diagnostics	32
miR-126	Decreased	Diagnostics	31
miR-133	Increased	Diagnostics	31
miR-145	Decreased	Diagnostics	31, 32
miR-146	Increased	Diagnostic/Prognostic	33
miR-150	Decreased	Diagnostics	32
miR-155	Decreased	Diagnostics	32
miR-182	Increased	Diagnostics	34
miR-208a	Increased	Diagnostics	31
miR-221	Increased	Diagnostics	35
miR-222	Increased	Diagnostics	32
miR-342	Decreased	Diagnostics	32
miR-378	Decreased	Diagnostics	32
miR-484	Decreased	Diagnostics	32

Stable angina pectoris			
miRNA	Direction of alteration compared with controls	Value of biomarker	References
mR-1	Increased	Diagnostic	36
miR-126	Decreased	Diagnostic	36
miR-133	Increased	Diagnostic	31
miR-147	Decreased	Diagnostic	37
miR-199a	Decreased in future cardiovascular events	Prognostic	38
miR-485-3p	Increased	Diagnostic	36



Unstable angina pectoris			
miRNA	Direction of alteration compared with stable angina pectoris and controls	Value of biomarker	References
miR-21	Increased	Diagnostic	39
miR-25	Increased	Diagnostic	39
miR-92a	Decreased	Diagnostic	39
miR-106b	Increased	Diagnostic	39
miR-126	Increased	Diagnostic	39
miR-590-5p	Increased	Diagnostic	39

Myocardial infarction			
miRNA	Direction of alteration compared with controls	Value of biomarker	References
miR-1	Increased	Diagnostic/Prognostic	15, 16, 17, 18
miR-21-5p	Increased	Diagnostic	19
miR-26a-5p	Decreased	Diagnostic	20
miR-30a	Increased	Diagnostic	21
miR-92a	Increased	Diagnostic	22
miR-122	Decreased	Diagnostic	23
miR-126-3p	Decreased	Diagnostic	20
miR-133a	Increased	Diagnostic	16, 18, 19, 24, 25, 26
miR-150-3p	Increased	Diagnostic	20
miR-191-5p	Decreased	Diagnostic	20
miR-208a/b	Increased	Diagnostic/Prognostic	4, 16, 28, 29
miR-328	Increased	Diagnostic	24
mir-375	Decreased	Diagnostic	23
miR-423-5p	Increased	Diagnostic	19
miR-486-3p	Increased	Diagnostics	20
miR-499	Increased	Diagnostics	4, 16, 29, 30

Acute heart failure			
miRNA	Direction of alteration	Value of biomarker	References
miR-18a-5p	Decreased	Diagnostic/Prognostic	1
miR-26b-5p	Decreased	Diagnostic	1
miR-27a-3p	Decreased	Diagnostic	1
miR-30b	Decreased	Diagnostic	2
miR-30e-5p	Decreased	Diagnostic	1
miR-103	Decreased	Diagnostic	2
miR-106a-5p	Decreased	Diagnostic	1
miR-142-3p	Decreased	Diagnostic	2
miR-199a-3p	Decreased	Diagnostic	1
miR-342-3p	Decreased	Diagnostic	2
miR-423-5p	Increased	Diagnostic	3
miR-499	Increased	Diagnostic	4
miR-652-3p	Decreased	Diagnostic/Prognostic	1

Circulating microRNAs associated with the response to therapy in heart failure patients		
miRNA	Direction of alteration compared with controls	References
miR-1	Increased	10
miR-26b-5p	Decreased	12
miR-29a-3p	Decreased	12
miR-30d	Increased	13
miR-30e-5p	Decreased	12
miR-92a-3p	Decreased	12
miR-145-5p	Decreased	10
miR-208a/208b	Increased	10
miR-483-3p	Increased	14
miR-499	Increased	10
miR-1202	Increased	14