miREIA

miRNA **E**nzyme **I**mmuno**a**ssay

look at microRNA in a new light

miRia

microRNAs for Diagnostics in Colorectal cancer

Colorectal cancer (CRC) is the third most prevalent cancer in the world. The screening and diagnosis of CRC currently relies heavily on invasive endoscopic techniques as well as imaging and antigen detection tools. More accessible and reliable biomarkers are necessary for early detection and prediction of CRC in order to expedite treatment and improve patient outcomes.

Many studies have indicated, that circulating miRNAs are characterized by high sensitivity and specificity to CRC and, moreover, they are very stable in body fluids. Therefore we believe that miRNAs are very promising non-invasive biomarkers and new discoveries in their detection and quantification will facilitate their translation to clinical practice.

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 CRC

Colorectal cancer				
miRNA	Direction of alteration	Value of biomarker	Sample	References
let-7a-5p	Decreased	Diagnostic	Plasma	1
let-7f-5p	Decreased	Diagnostic	Plasma	1
miR-7	Increased	Diagnostic	Plasma	2
miR-9b	Decreased	Diagnostic	Serum	3
miR-17-3p	Incerased	Diagnostic/ Prognostic	Serum	4
miR-17-3p	No difference		Serum	5
miR-19a-3p	Increased	Diagnostic	Serum	6
miR-20a	Incerased	Diagnostic	Plasma	7
miR-21-5p	Increased	Diagnostic	Serum/whole blood/serum	6, 8, 9
miR-23a-3p	Incerased	Diagnostic/ Prognostic	Serum	10
miR-24	Decreased	Diagnostic	Plasma	11
miR-26a-5p	Decreased	Diagnostic	Plasma	12
miR-27a-3p	Incerased	Diagnostic	Serum	10
miR-29a	Incerased	Diagnostic	Serum/plasma/ serum	9, 13, 14
miR-29a	No difference		Serum/plasma	5, 7
miR-29b	Decreased	Diagnostic	Plasma	15
miR-31	Incerased	Prognostic	Plasma	13
miR-93	Increased	Diagnostic	Plasma	2
miR-92a	Incerased	Diagnostic	Serum/plasma/ serum/plasma	9, 16, 17, 18
miR-92a	No difference		Serum/plasma	5, 7
miR-96	Incerased	Diagnostic/ Prognostic	Plasma	19
miR-96-5p	Decreased	Diagnostic	Plasma	20
miR-106a	Incerased	Diagnostic/ Prognostic	Serum/plasma	4, 7
miR-139-5p	Incerased	Prognostic	Serum	21
miR-139-5p	Decreased	Diagnostic	Serum	22
miR-141	Incerased	Diagnostic	Plasma	19

Colorectal cancer				
miRNA	Direction of alteration	Value of biomarker	Sample	References
miR-142-5p	Incerased	Diagnostic	Serum	10
miR-142a-3p	Decreased	Diagnostic	Plasma	12
miR-145	Decreased	Diagnostic/ Prognostic	Serum	4
miR-149	Decreased	Diagnostic	Plasma	20
miR-150	Decreased	Diagnostic	Whole blood	8
miR-155	Incerased	Diagnostic/ prognostic	Serum	23
miR-183	Incerased	Recurence/ Prognostic	Serum	24
miR-194	Decreased	Diagnostic	Serum	3
miR-196b	Incerased	Diagnostic	Serum	25
miR-199a-3p	Incerased	Diagnostic	Serum	26
miR-200b	Incerased	Prognostic	Plasma	13, 19
miR-203	Incerased	Diagnostic/ Prognostic	Plasma/plasma/ serum	13, 19, 27
miR-210	Incerased	Diagnostic	Serum	28
miR-221	Incerased	Diagnostic	Whole blood	8
miR-223	Incerased	Diagnostic	Plasma	18
miR-320a	Decreased	Diagnostic	Plasma	11
miR-375	Decreased	Diagnostic/ Prognostic	Serum	17
miR-376c-3p	Incerased	Diagnostic/ Prognostic	Serum	10
miR-409-3p	Increased	Diagnostic	Plasma	2
miR-423-5p	Decreased	Diagnostic	Plasma	11
miR-425-5p	Increased	Diagnostic	Serum	6
miR-506	Incerased	Diagnostic	Plasma	29
miR-622	Incerased	Diagnostic	Serum	22
miR-760	Decreased	Diagnostic/ Prognostic	Serum	17
miR-4316	Incerased	Diagnostic	Plasma	29

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Date of issue April 2018

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