

Insight into the role of miR-223-3p in regulating platelet reactivity

Alix Garcia¹, Sylvie Dunoyer-Geindre¹, Séverine Nolli¹, Jean-Luc Reny^{1,2}, Pierre Fontana^{1,3}

¹ Geneva Platelet Group, Faculty of Medicine, University of Geneva, Geneva, Switzerland

² Division of General Internal Medicine, Geneva University Hospitals, Geneva, Switzerland

³ Division of Angiology and Haemostasis, Geneva University Hospitals, Geneva, Switzerland

INTRODUCTION

The vast majority of circulating miRNAs originates from activated platelets and several evidences pointed miRNA level as determinant of platelet reactivity.¹ Therefore they could be used as biomarkers to predict clinical outcome in cardiovascular patients. miR-223-3p and miR-150-5p are among the most expressed miRNAs in platelets, however their impact on platelet function is poorly understood.

OBJECTIVES

To investigate the impact of miR-223-3p and miR-150-5p on platelet function.

To give an insight into of the mechanisms mediated by miR-223-3p and miR-150-5p regulation.

METHODS

191 stable CVD under aspirin treatment²

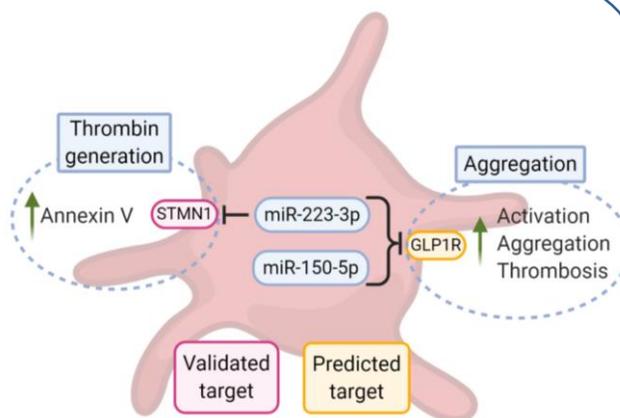
- Relative expression of circulating miR-223 and miR-150 (qPCR)
- Aggregation with various agonists (LTA)
- Thrombin generation markers (TAT and F1+2)

Spearman association → Network

RESULTS

	miR-223-3p		miR-150-5p	
	Rho	P-Value	Rho	P-Value
AA	0.058	0.431	0.079	0.282
ADP (5µM)	0.015	0.837	0.132	0.071
ADP(20µM)	0.166	0.023	0.257	<0.001
Collagen	0.178	0.014	0.260	<0.001
F1+2	0.224	0.002	0.124	0.092
TAT	0.281	<0.001	0.046	0.533

Circulating platelet-derived miR-223 is rather associated with thrombin generation markers, while miR-150 is rather associated with platelet aggregation.



The *in silico* study pointed targets of the miRNAs which may govern distinct facets of the platelet reactivity.

CONCLUSIONS

The miR-223 and miR-150 expression may be associated with distinct platelet function facets; therefore miRNA are promising candidate biomarkers to be used to tailor antithrombotic therapy. The impact of miR-223 and miR-150 on platelet reactivity may be due to regulation of STMN1 and GLP1R. The investigation of the underlying mechanisms governing platelet reactivity should be investigated in further studies following our recent suggested guidelines.³

REFERENCES

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CONTACT INFORMATION

Alix.garcia@unige.ch