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Small regulatory RNAs in vascular remodeling and atherosclerosis

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Citation
Ingen, E. van. (2022, June 9). *Small regulatory RNAs in vascular remodeling and atherosclerosis*. Retrieved from https://hdl.handle.net/1887/3307861

Version:	Publisher's Version
License:	Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden
Downloaded from:	https://hdl.handle.net/1887/3307861

Note: To cite this publication please use the final published version (if applicable).

Stellingen behorend bij het proefschrift getiteld

Small regulatory RNAs in Vascular Remodeling and Atherosclerosis

1. MicroRNA-494-3p is a potential therapeutic target for stabilizing vulnerable lesions. (this thesis)

2. Downregulation of microRNA-494-3p dampens pro-inflammatory macrophage polarization while upregulation of microRNA-494-3p enhances anti-inflammatory macrophage polarization. (this thesis)

3. C/D box snoRNA SNORD113-6 facilitates a modest regulation of its targets, but affects many target genes simultaneously. Modulation of SNORD113-6 can thus be powerful in complex diseases as cardiovascular disease. (this thesis)

4. SNORD113-6 (AF357425 in mice) directs site-specific fragmentation of tRNAs via 2'-O-ribose-methylation. (this thesis)

5. A single microRNA may have hundreds of messenger RNA targets, which makes a full appreciation of the physiologic ramifications of such broad-ranging effects a challenge. *(Roopesh S Gangwar et al. Noncoding RNAs in Cardiovascular Disease: Pathological Relevance and Emerging Role as Biomarkers and Therapeutics. Am J Hypertens. 2018 Jan 12;31(2):150-165)*

6. Future steps in analyzing the interaction of multiple RNAs in regulating key pathways using more advanced computational approaches are clearly needed. *(Saumya Das et al. Noncoding RNAs in Cardiovascular Disease: Current Knowledge, Tools and Technologies for Investigation, and Future Directions: A Scientific Statement From the American Heart Association. Circ Genom Precis Med. 2020 Aug;13(4))*

7. Due to the high expression of SNORDs –there are roughly as many SNORD3 transcripts as mRNA transcripts in a cell- SNORDs likely represent an important but underappreciated class of mRNA regulators. *(Marina Falaleeva et al. C/D-box snoRNAs form methylating and non-methylating ribonucleoprotein complexes: Old dogs show new tricks. Bioessays. 2017 Jun;39(6))*

8. tRNA-derived RNA fragments are the new entrant in the field of small ncRNAs. *(Pandey et al. Regulatory roles of tRNA-derived RNA fragments in human pathophysiology. Mol Ther Nucleic Acids. 2021 Jul 2;26:161-173)*

9. We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run. *(Roy Charles Amara (1925-2007), Amara's law)*
   - Sequencing techniques will have a major impact on our lives

10. One never notices what has been done; one can only see what remains to be done. *(Marie Curie, Letter to her brother (1894))*
    - Research is never done

11. You never have the wind with you – either it is against you or you're having a good day. *(Daniel Behrman. The Man Who Loved Bicycles: The Memoirs of an Autophobe. Harper's Magazine Press, 1973)*
    - If your experiment is successful, you're having a good day

12. No hour of life is wasted that is spent in the saddle. *(Winston Churchill (1874-1965))*
    - Being in the saddle expands the scientific mind