



Heart Failure & Arrhythmias



Pulmonary Hypertension
& Thrombosis



Atherosclerosis
& Ischemic Syndromes



Diabetes & Metabolism



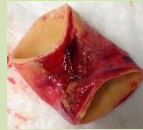
Microcirculation

Focus of research group (I)

Name PI: Vivian de Waard

Department: Medical Biochemistry, AMC

Group size 2018: 4 PhD students, 2 students, 1 technician



Current mission, vision and aim



Mission -> To unravel the different signalling pathways involved in Marfan Syndrome and other aortic aneurysm diseases.

Vision -> By intense collaboration between fundamental researchers and clinicians generate data to achieve our goals on solving aortic aneurysm disease.

Aim -> Finally discover drugs that benefit aortic aneurysm patients so that surgery is not the only treatment option.

Focus of research group (II)

Current expertise & skills

Main focus:

- Mouse models of Marfan syndrome and abdominal aneurysms
- Clinical trial in Marfan patients; RESVcue Marfan
- Haploinsufficiency/Dominant negative FBN1 mutations
- Smooth muscle cells / Extracellular matrix
- Vascular pathology / Immunohistochemistry / Imaging
- Aortic explant cultures (smooth muscle cells)



Other topics:

- Transcription factor Nur77 in the heart (calcium handling)
- GTPase Rac1 (and interaction with the drug azathioprine)



Funding valid in 2018

- AMC Foundation (Marfan family and Horstingstuit Foundation)
- Rembrandt grant (collaboration with Dr. Jaap van Buul)
- ACS Out of the Box (collaboration with Prof. Bianca Brundel)
- Reconnect Out of the Box grant (CVON; Netherlands Heart Foundation)



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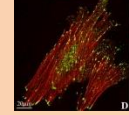


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Future plans

Short term (1-2 year) plan

Plan -> Marfan patient derived 3D cell culture characterisation to identify Marfan subtypes.



-> Generate different Marfan mouse models to cover the different subtypes of Marfan patients.



Necessary infrastructure -> Mouse facility, Mouse and Cell Imaging facility (collaboration with Ocello BV), CRISPR-Cas expertise, Proteomics unit.

Long term (>2 year) plan

Plan -> Complete Clinical Marfan study; RESVcue Marfan.

-> Whole Genome Sequencing Marfan families to uncover modifier genes in aneurysm growth/rupture.



Necessary infrastructure -> Whole Genome Sequencing analysis expertise, Biobank facility, Statistical expertise.

Collaborations in ACS

Prof Mulder, Prof Zwinderman, Dr Groenink, Dr Micha, Dr Pals (Marfan)

Prof Balm / Dr Koolbergen / Dr Yeung (Vascular Surgery)

Dr Van Buul, Prof Brundel, Dr Boon, Dr Barnett, Dr Creemers, Dr Remme, Dr Wust