

# Advancing regenerative medicine by generating knowledge about the nature of cadherins in human mesenchymal stem cells

Citation for published version (APA):

Passanha, F. R. (2021). *Advancing regenerative medicine by generating knowledge about the nature of cadherins in human mesenchymal stem cells*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20211206fp>

## Document status and date:

Published: 01/01/2021

## DOI:

[10.26481/dis.20211206fp](https://doi.org/10.26481/dis.20211206fp)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

## General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

[www.umlib.nl/taverne-license](http://www.umlib.nl/taverne-license)

## Take down policy

If you believe that this document breaches copyright please contact us at:

[repository@maastrichtuniversity.nl](mailto:repository@maastrichtuniversity.nl)

providing details and we will investigate your claim.

# Propositions

accompanying the dissertation

## **Advancing regenerative medicine by generating knowledge about the nature of cadherins in human mesenchymal stem cells**

By Fiona Rosaleen Passanha,  
Maastricht, 6<sup>th</sup> December 2021

1. It's the time you spent on your rose that makes your rose so important. (The Little Prince)
2. Cells are very complicated. The inside of a cell is extremely crowded. It's very inhomogeneous. Everything is constantly far away from equilibrium and its material properties are very weird. It's not viscous, it's not elastic, it's not plastic, it's some combination of all those things and can change its material properties over time. (Julie Theriot)
3. Tissue engineering could be more successful if tissue engineers would take lessons from developmental biology.
4. Cadherin-2 expression decreases with an increase in cell density in culture. (this thesis)
5. Cadherin-2 knockdown enhances bone matrix formation, whereas cadherin-11 knockdown diminishes it. (this thesis)
6. Loss of cadherin-11 disrupts adipogenic differentiation. (this thesis)
7. Cells that lack cadherin-11 lack the feedback loops for ERK1/2 phosphorylation and hence have diminished proliferation. (this thesis)
8. The long-term culture of hMSCs in 3D culture systems decreases proliferation. (this thesis)
9. 3D cell culture is transforming the field, however, using 3D cultures with standard cell analysis methods can be challenging.
10. Education in regenerative medicine is lagging behind the scientific advances made.
11. Timing is everything.