

Protection of the preterm brain against inflammatory stress

Citation for published version (APA):

Klein, L. (2022). *Protection of the preterm brain against inflammatory stress: A promising role for stem cell-based therapy and Annexin A1*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20220602lk>

Document status and date:

Published: 01/01/2022

DOI:

[10.26481/dis.20220602lk](https://doi.org/10.26481/dis.20220602lk)

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

Take down policy

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

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

Protection of the preterm brain against inflammatory stress:
A promising role for stem cell-based therapy and Annexin A1

Luise Klein

1. Multipotent Adult Progenitor Cells enhance the brain directed and cerebral immune response in the presence of preceding antenatal inflammation indicating an *in vivo* licensing effect of stem cells (*this thesis*).
2. The neuroimmune axis including brain barriers and how to modulate it is an important field for future research in neonatal brain injury and other neuroinflammatory conditions (MS, AD, Parkinson).
3. Annexin A1, a trophic and downstream factor of stem cells, potentially acts by prevention of blood brain barrier injury and mediator of resolution of inflammation (cerebrally, systemically) (*this thesis*).
4. Circulatory Annexin A1 might have potential as new biomarker for BBB disruption in preterm brain injury and should warrant further investigation (*this thesis*).
5. Sex- and route-dependency on treatment efficacy of Annexin A1 after hypoxia-ischemia-mediated brain injury should not be ignored (*general discussion*).
6. Combining Annexin A1 with stem cell therapy or hypothermia might be a new therapeutic strategy for the future (*Impact*).
7. To move stem cells from preclinical work into clinical trials, perinatal animal studies are essential to create consensus about treatment regime (dose/ dosing interval & duration/route/type of stem cell).
8. Fragility and strength upon a bad start are not necessarily opposites (Life lessons from the Lamb Intensive Care Unit).
9. Research is like growing a plant - you care for it, you observe and stay on track, you usually only postulate what went not as planned when leaves (experiments) are turning yellow/brown (went not the way you hypothesized), its development is unforeseeable and you can propagate it endlessly...
10. "Sometimes, I do wonder why
These leaves keep fallin'
Leaves keep fallin'
Sometimes, I do wonder why
Leaves keep fallin'
Leaves keep fallin'
Leaves keep fallin'
Keep searchin'" – (*Leaves - Alle Farben*)

