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The ECM as a driver of fibroblast senescence and disrupted epithelial repair in IPF

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APPENDICES

Statement of contributions

Acknowledgements

Curriculum vitae

List of publications

Statement of contributions

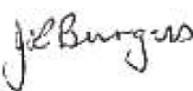
Statement of contribution for chapter 2

By signing below, I confirm that Kaj Erik Cornelis Blokland contributed to the following paper entitled:

Blokland, K. E. C., Pouwels, S. D., Schuliga, M., Knight, D. A., & Burgess, J. K. (2020). Regulation of cellular senescence by extracellular matrix during chronic fibrotic diseases. *Clinical Science*, 134(20), 2681-2706.

Author contributions:

K.E.C.B. prepared the figures. K.E.C.B., S.D.P., M.S. and J.K.B. drafted the manuscript. K.E.C.B., S.D.P., M.S., D.A.K. and J.K.B. edited and revised the manuscript. K.E.C.B., S.D.P., M.S., D.A.K. and J.K.B. approved the final version of manuscript.

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Janette K. Burgess	Jan 5, 2021	
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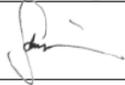
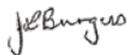
Statement of contribution for chapter 3

By signing below, I confirm that Kaj Erik Cornelis Blokland contributed to the following paper entitled:

Kaj E.C. Blokland, Mehmet Nizamoglu, Habibie Habibie, Theo Borghuis, Michael Schuliga, Barbro N. Melgert, Darryl A. Knight, Corry-Anke Brandsma, Simon D. Pouwels and Janette K. Burgess. Stiff matrices induce a profibrotic response but not cellular senescence in primary lung fibroblasts. *Biochim Biophys Acta Mol Basis Dis*, 2021, Submitted

Author contributions:

K.E.C.B., M.N., M.S., D.A.K., C.A.B., S.D.P and J.K.B conceived and designed research; K.E.C.B and M.N performed experiments; K.E.C.B., M.N., H.H and T.B analysed data; K.E.C.B., M.N., H.H., M.S., B.N.M., D.A.K., C.A.B., S.D.P and J.K.B interpreted results; K.E.C.B and M.N prepared figures; K.E.C.B., M.N., H.H and T.B writing - original draft; K.E.C.B., M.N., H.H., T.B., M.S., B.N.M., D.A.K., C.A.B., S.D.P and J.K.B Writing - review and editing. All authors have read and agreed to the final version of the manuscript.

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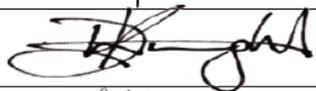
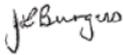
Statement of contribution for chapter 4

By signing below, I confirm that Kaj Erik Cornelis Blokland contributed to the following paper entitled:

Blokland K.E.C., Habibie H, Borghuis T, Teitsma GJ, Schuliga M, Melgert BN, et al. Regulation of Cellular Senescence Is Independent from Profibrotic Fibroblast-Deposited ECM. *Cells*. 2021;10(7):1628.

Author contributions:

Conceptualization, K.E.C.B, M.S., D.A.K., C.A.B, S.D.P and J.K.B.; methodology, K.E.C.B., M.S., D.A.K., S.D.P. and J.K.B.; software, T.B.; validation, B.M.N., C.A.B., S.D.P and J.K.B.; formal analysis, K.E.C.B., H.H and T.B.; investigation, K.E.C.B., H.H., T.B., G.J.T; resources, K.E.C.B.; data curation, K.E.C.B., S.D.P and J.K.B.; writing—original draft preparation, K.E.C.B., H.H. and G.J.T; writing—review and editing, K.E.C.B, H.H., T.B., G.J.T., M.S., B.N.M., D.A.K., C.A.B., S.D.P and J.K.B.; visualization, K.E.C.B.; supervision, S.D.P., J.K.B.; project administration, J.K.B.; funding acquisition, J.K.B. All authors have read and agreed to the published version of the manuscript.

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Statement of contribution for chapter 5

By signing below, I confirm that Kaj Erik Cornelis Blokland contributed to the following paper entitled:

Blokland, K. E. C., Waters, D. W., Schuliga, M., Read, J., Pouwels, S. D., Grainge, C. L., ... Knight, D. A. (2020). Senescence of IPF Lung Fibroblasts Disrupt Alveolar Epithelial Cell Proliferation and Promote Migration in Wound Healing. *Pharmaceutics*, 12(4), 389.

Author contributions:

Author Contributions: K.E.C.B., D.W.W., M.S., C.L.G., S.E.M., C.M.P., J.K.B., and D.A.K. conceived and designed research; K.E.C.B., D.W.W., M.S. and J.R. performed experiments; K.E.C.B., D.W.W., M.S. and J.R. analyzed data; K.E.C.B., D.W.W., M.S., J.R., S.D.P., C.L.G., S.E.M., C.M.P., J.K.B. and D.A.K. interpreted results; K.E.C.B., D.W.W. prepared figures; J.J. and G.W. isolated fibroblast cultures. All authors have read and agreed to the published version of the manuscript.

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helped me to develop as a scientist in many ways. Your insights as non-senescence person are valuable, it always reminds me there is more to life than senescence and fibroblasts.

Often when PhD students talk about their supervisors, we always hear stories about professors not being accessible enough, they are always too busy, but I can honestly say I never experienced it. Without the continuous support and patience of my supervisors I would not have made the finish line. Thank you all, I could not have wished for a better supervisory team!

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Curriculum vitae

Kaj Blokland was born on October 16th, 1986 in Apeldoorn (the Netherlands). After finishing his secondary vocational education (MBO) in clinical pathology he wanted to continue in research and started a bachelor (HBO) degree in “Medical Biology and Laboratory Research”. During his bachelor Kaj used his time to explore as much as possible in the field of stem cell research, oral microbiology and biochemistry. During the final phase of this bachelor Kaj went to Canada and worked for 6-months at the Atlantic Research Centre focussing on glycosphingolipid. He graduated from his bachelor and directly started his masters in regenerative medicine at the university of Utrecht. During his masters Kaj worked on the use of GelMA hydrogels as a biomaterial to regenerate articular cartilage at the department of orthopaedics, UMC Utrecht. He then wrote a research proposal, as part of his writing assignment, that was submitted to the Dutch arthritis foundation to secure research funding for a PhD project. Unfortunately, the research proposal was rejected in the last round. Kaj wanted to go abroad again and secured a 7-months research project at the Paul Ehrlich Institute in Langen, Germany. The project was focusing on the prevention of epigenetic silencing in pluripotent stem cells using a ubiquitous chromatin opening element. After the project was finished Kaj returned to the Netherlands to finish his master’s degree and was offered a job as research assistant for 6 months to finish the project for publication. During his time in Germany, it became clear Kaj wanted to continue in research and academia by pursuing a PhD.

In the summer of 2016 Kaj got offered a Double Degree PhD project at the laboratory of Prof. Darryl Knight at the University of Newcastle in Australia and Prof. Janette Burgess at the University medical Center Groningen in the Netherlands which he gladly accepted. The focus of the project was fibroblast senescence as a driver of idiopathic pulmonary fibrosis. He started his PhD project in November 2016 in Australia for two years which he focussed on the interaction between senescence fibroblasts and alveolar epithelial cell repair. In 2019 Kaj returned to the Netherlands to commence the last two years of his PhD focussing on the extracellular matrix as driver of fibroblast senescence in IPF.

List of publications

- **Blokland K.E.C.**, Habibie H, Borghuis T, Teitsma GJ, Schuliga M, Melgert BN, et al. Regulation of Cellular Senescence Is Independent from Profibrotic Fibroblast-Deposited ECM. *Cells*. 2021;10(7):1628.
- **Blokland, K. E. C.**, Pouwels, S. D., Schuliga, M., Knight, D. A., & Burgess, J. K. (2020). Regulation of cellular senescence by extracellular matrix during chronic fibrotic diseases. *Clinical Science*, 134(20), 2681-2706.
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- McVey, M. J., Maishan, M., **Blokland, K. E. C.**, Bartlett, N., & Kuebler, W. M. (2019). Extracellular vesicles in lung health, disease, and therapy. *American Journal of Physiology - Lung Cellular and Molecular Physiology*, 316(6), L977-L989.
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