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Redirecting TGF- β signaling pathways: advancing targeted therapy for PAH and FOP

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Appendices

List of publications

Dankwoord and acknowledgements

Curriculum vitae

List of publications

- **Wits, M.**, Gómez-Suárez, N., López, A. D., Farfán, N., Bekedam, F., Sampadi, B., ... & Sanchez-Duffhues, G. (2025). Multi-omics reveals global signaling rewiring and identifies Activin A-induced dysregulation of FOS/Activator Protein 1 as a novel target in Fibrodysplasia ossificans progressiva. *bioRxiv*, 2025-01. <https://doi.org/10.1101/2025.01.21.634061>
- Valer, J. A., Deber, A., **Wits, M.**, Pimenta-Lope, C., Goumans, M. J., Rosa, J. L., ... & Ventura, F. (2025). PI3K α inhibition blocks osteochondroprogenitor specification and the hyper-inflammatory response to prevent heterotopic ossification. *eLife*, 12, RP91779. <https://doi.org/10.7554/elife.91779.3>
- Coculo, L., **Wits, M.**, Mariani, I., Fianco, G., Cappato, S., Bocciardi, R., ... & Stagni, V. (2025). Interplay between ALK2^{R206H} mutant receptor and autophagy signaling regulates receptor stability and its chondrogenic functions. *Cell Death Discovery*, 11(1), 117.. <https://doi.org/10.1038/s41420-025-02393-0>
- **Wits, M.**, Haarmans, N., Sanchez-Duffhues, G., & Goumans, M. J. (2024). TGF- β receptor-specific NanoBRET Target Engagement in living cells for high-throughput kinase inhibitor screens. *SLAS Discovery*, 29(8), 100196. <https://doi.org/10.1016/j.slasd.2024.100196>
- Becher, C., **Wits, M.**, de Man, F. S., Sanchez-Duffhues, G., & Goumans, M. J. (2024). Targeting soluble TGF- β factors: advances in precision therapy for pulmonary arterial hypertension. *Basic to Translational Science*, 9(11), 1360-1374. <https://doi.org/10.1016/j.jacbts.2024.04.005>
- **Wits, M.**, Becher, C., de Man, F., Sanchez-Duffhues, G., & Goumans, M. J. (2023). Sex-biased TGF β signalling in pulmonary arterial hypertension. *Cardiovascular Research*, 119(13), 2262-2277. <https://doi.org/10.1093/cvr/cvad129>
- Bosma, P. J., **Wits, M.**, & Oude-Elferink, R. P. J. (2021). Gene Therapy for Progressive Familial Intrahepatic Cholestasis: Current Progress and Future Prospects. *International Journal of Molecular Sciences*, 22(1), 273. <https://doi.org/10.3390/ijms22010273>

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Curriculum vitae

Marius Wits was born on the 11th of July 1995 in Groningen. He received his VWO high school diploma at Kamerlingh Onnes College Groningen in 2013. He continued his studies with a bachelor Biology at Utrecht University and he finalized his master Regenerative Medicine and Technology (Biomedical Sciences) at Utrecht University in 2020. His first master's research internship focused on functional development of organoids for rare kidney disease at the Regenerative Medicine Center Utrecht. In his second internship he worked on pre-clinical AAV- and Cas9-mediated integrative gene therapy for rare liver diseases at the Tytgat Institute in Amsterdam. His interest in molecular biology with a translational perspective led him to pursue a PhD in the group of Prof. Marie-José Goumans at the Leiden University Medical Center since 2020. In these studies, he delved into TGF- β signaling in two rare genetic disorders: Pulmonary Arterial Hypertension and Fibrodysplasia Ossificans Progressiva. He was awarded a research fellowship as part of this trajectory and conducted this study at the University of Barcelona in 2023. He presented his work at 14 national and international conferences, earning a conference travel award and the FASEB Poster Award at the 2024 TGF- β Conference. His accomplishments were published in 7 articles across various research journals. Currently, he continues his career as a post-doctoral researcher in the group of Prof. Peter ten Dijke.