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The Netherlands

Dissecting cellular function of fibronectin in osteoarthritic cartilage

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Citation

Hoolwerff, M. van. (2022, September 6). *Dissecting cellular function of fibronectin in osteoarthritic cartilage*. Retrieved from <https://hdl.handle.net/1887/3455075>

Version: Publisher's Version

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Stellingen behorend bij het proefschrift getiteld

Dissecting cellular function of fibronectin in osteoarthritic cartilage

by Marcella van Hoolwerff

1. To confirm whether high correlations between lncRNAs and mRNAs signify a biological causal relation, functional validation with antisense oligonucleotide technology needs to be performed (this thesis).
2. Proper binding between fibronectin and collagen type II is essential for the communication between chondrocytes and extracellular matrix (this thesis).
3. Decreased availability of the classical integrin-binding domain of fibronectin has detrimental effects for chondrogenesis (this thesis).
4. The combination of exome sequencing, hiPSCs, CRISPR/Cas9, and organoid disease modelling holds immense potential to uncover previously unknown underlying OA disease mechanisms (this thesis).
5. To allow clinical translation of GWAS findings to drug target discovery, funding should go towards studies unraveling the downstream biological mechanisms instead of mainly to more and bigger GWA-studies (NPJ Parkinsons Dis. 2020 Sep 9;6:23.)
6. To accelerate the understanding of underlying disease mechanisms of osteoarthritis, a multi-omics approach in which both transcriptomics and epigenetics are investigated has to become the golden standard (Osteoarthritis and Cartilage Open, Volume 3, Issue 4, 2021, 100144).
7. In the field of osteoarthritis research, human in vitro models are now becoming so advanced that animal in vivo experiments are not required to validate underlying mechanisms (Adv. Healthcare Mater. 2021, 10, 2100961).
8. To improve the efficiency of science, negative results and studies confirming previous data should be valued more and also be published in high-regarded journals.
9. Societies should prioritize economic policies and social programs for disease prevention of chronic, age-related diseases and to improve quality of life of chronically ill patients over scientific research into costly treatments for rare diseases.
10. Gender quotas and equal pay are necessary yet still insufficient to ensure equality for all genders in science.