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Guide to the heart: Differentiation of human pluripotent stem cells towards multiple cardiac subtypes

Schwach, V.

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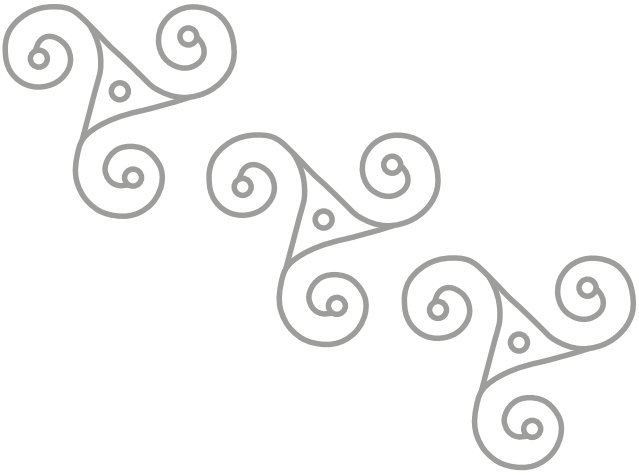

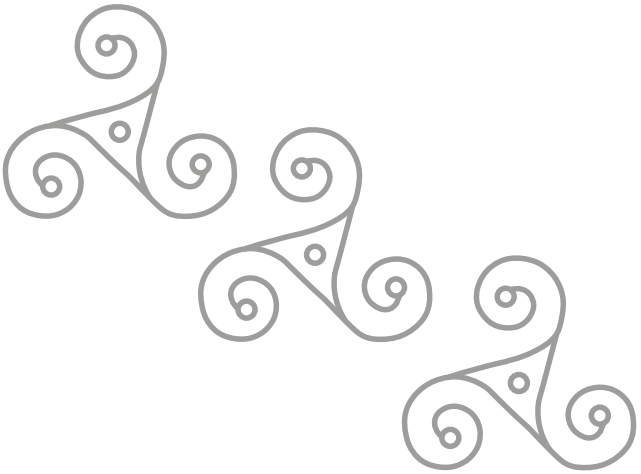

Appendix:

Curriculum vitae

List of publications

Fellowhips

Acknowledgements

Curriculum vitae

Verena Schwach was born on 15th of February 1986 in Mayen, Germany. Verena has obtained her Bachelor degree in Biotechnology at the University of Applied Sciences in Mannheim, Germany in 2010. During her Bachelor studies she has performed an internship in the group of Prof. Wolfgang Sommer at the Central Institute of Mental Health in Mannheim, Germany, on the locomotor activity and the loss of righting reflex (LORR) after alcohol exposure in rats, as well as ethanol induced AKT and GSK- 3ß phosphorylation in the medial prefrontal cortex of the rat brain and the effect of Rimonabant on ethanol induced phosphorylation of AKT and GSK-3ß. For her Bachelor thesis, she worked on the characterization of HtrA1 as an interaction partner of Notch-ligand Jagged1 during blood vessel development in the group of Prof. Andreas Fischer at the CBTM and German Cancer Research Center, Mannheim, Germany. After finishing her Bachelor, Verena moved to The Netherlands to pursue a Pre-Master and Master in Biomedical Sciences at the Leiden University Medical Center. During her Master she accomplished an internship at the Erasmus Medical Center in Rotterdam, The Netherlands, under supervision of Dr. Moniek de Maat where she performed live-cell imaging of endothelial cells in a 3D-fibrin matrix: γA/γ`-fibrin, platelet growth factors and endothelial angiogenesis. In 2012, Verena joined the group of Prof. Robert Passier at the department of Anatomy and Embryology at the Leiden University Medical Center headed by Prof. Christine Mummery to carry out her Master assignment on the directed differentiation of human pluripotent stem cells to specific cardiac subtypes. After graduating with cum laude qualification, she started her PhD program in Molecular cardiovascular developmental biology in the group of Prof. Robert Passier. Verena was working on the generation of different subtypes of cardiac cells and their use for drug screening and cardiac repair and has published several studies which are depicted in this thesis. Since 2017, Verena is working as a postdoc at the Applied Stem Cell Technologies department of the University in Twente which is headed by Prof. Robert Passier. Here she is working on the generation of advanced tissue models for safety pharmacology and personalized medicine utilizing human stem cell-derived cardiac cells.

List of publications

Schwach, V., Fernandes, MG., Maas, S., Gerhardt, S., Tsonaka, R., van der Weerd, L., Passier, R., Mummery, C.L., Birket, M.J., Salvatori, D.C.F., Expandable human cardiovascular progenitors from stem cells for regenerating mouse heart after myocardial infarction, Cardiovascular Research: cvz181. doi: 10.1093/cvr/cvz181

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Schwach, V., Verkerk, A.O., Mol M., Monshouwer-Kloots, J.J., Devalla, H. D., Orlova, V.V., Anastassiadis, K., Mummery, C.L., Davis, R.P., Passier, R., 2017. A COUP-TFII Human Embryonic Stem Cell Reporter Line to Identify and Select Atrial Cardiomyocytes. Stem Cell Reports: 9 (6), 1765-1779. doi: 10.1016/j.stemcr.2017.10.024

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Devalla, H.D., Schwach, V., Ford, J.W., Milnes, J.T., El-Haou, S., Jackson, C., Gkatzis K., Elliott D.A., Chuva de Sousa Lopes S.M., Mummery C.L., Verkerk A.O. and Passier, R. (2015). Atrial-like cardiomyocytes from human pluripotent stem cells are a robust preclinical model for assessing atrial-selective pharmacology. EMBO Molecular Medicine: 7 (4), 394–410. doi: 10.15252/emmm.201404757

Birket, M.J., Ribeiro, M.C., Verkerk, A.O., Ward, D., Leitoguinho, A.R., den Hartogh, S.C., Orlova V.V., Devalla H.D., Schwach V., Bellin M., Passier R. and Mummery, C.L. (2015). Expansion and patterning of cardiovascular progenitors derived from human pluripotent stem cells. Nature Biotechnology: 1–12. doi: 10.1038/nbt.3271

Fellowships

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Hustcare Talent program (2017), Dutch Heart Foundation

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Maurits en Anna de Kock Stichting 2018

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