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ESC First Contact Initiative Grant – outcome report

Due to the fact that some of the data gathered during this First Contact Initiative Grant (FCIG) are still unpublished, the results will not be described within this report.

First of all, I would like to thank the ESC and the ESC Council on Basic Science for awarding me with this FCIG, which constituted a privileged opportunity to visit an excellent and renowned group in the field of cardiovascular diseases.

I am a PhD student at the Group of Ubiquitin-dependent proteolysis and Intercellular Communication (GUIC), from the Institute of Biomedical Imaging and Life Sciences (Faculty of Medicine, University of Coimbra, Portugal). Recently, we have been focused on understanding the complexity of extracellular vesicle (EV)-mediated communication in the heart, and the role of the gap junction protein Cx43 in this process.

In this context, the FCIG allowed me to visit the laboratory of Professor Joost Sluijter – Experimental Cardiology Laboratory at the University Medical Center (UMC, Utrecht, The Netherlands). The main interests of Prof Sluijter's laboratory include the study of cardiac injury and repair mechanisms and, in particular, the role of paracrine signaling, including EV-mediated communication and miRNA therapeutics for heart repair.

I stayed in Sluijter's lab for four weeks, and during this time, I had the opportunity to broaden my technical and scientific knowledge in the field of EVs and miRNAs. Namely, I performed EV isolation from cultured cells, by differential ultracentrifugation, followed by characterization of vesicle miRNA content through RT-qPCR. Additionally, I was able to set up and optimize *in vitro* assays using EVs.

During my stay in Utrecht, I also had the opportunity to attend the group meetings that included data presentation and discussion, and journal clubs, which enabled me to get in contact with different issues, concepts and techniques. The contact with the comprehensive and integrative translational approach of the Experimental Cardiology lab was very important, and constituted a valuable contribution for the prosecution of the present project. Strikingly, the establishment of a concrete collaboration with his group fostered by this award will certainly contribute to promote synergies and diversify our own

approaches and perspectives, thus helping to improve the quality of our work and accomplish more ambitious objectives.
Finally, I would like to thank Prof Joost Sluijter, Emma Mol and Esther van Eeuwijk for their availability to discuss the project and plan the experiments, and for tutoring me during my visit to the UMC.

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