



RESEARCH TOPIC MEM 26

Genome editing approach for the therapy of LMNA-dependent inherited cardiomyopathy Curriculum MEM

Laboratory name

Molecular cardiology
Humanitas University

Research Supervisor

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Abstract

The candidate will carry out research aimed at defining the phenotype of a humanised model of LMNA mutation causing cardiomyopathy and on gene editing studies aimed at normalising the phenotype through a Crisp/Cas9 approach. Characterization of this mouse model will be carried out with state of the art molecular biology techniques (ChIP seq, RNA seq, single cell seq. etc). Other projects are available according to the expertise of the candidate.

Scientific references

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- Greco CM, Kunderfranco, P., Rubino, M., Larcher, V., Carullo, P., Anselmo, A., Kurz, K., Carell, T., Angius, A., Latronico, MiVG, Papait, R., and Condorelli G (2016) DNA Hydroxymethylation controls cardiomyocyte gene expression in development and hypertrophy Nature Comm, 7:12418. doi: 10.1038/ncomms12418
- Greco CM, Condorelli G. Epigenetic modifications and noncoding RNAs in cardiac hypertrophy and failure. Nat Rev Cardiol. 2015 May 12. 12(8):488-97.
- Papait,S, Serio, S., Pagiatakis, C., Rusconi, F., Carullo, P., Mazzola, M., Salvarani, N., Miragoli, M., Condorelli, G (2017): Histone methyltransferase G9a is required for cardiomyocyte homeostasis and hypertrophy, Circulation, 2017 Aug 4. pii: CIRCULATIONAHA.117.028561, 136(13):1233-1246
- Salvarani N, Crasto S, Miragoli M, Paulis M, Kunderfranco P, Forni A, Dal Ferro M, Sinagra G, Vezzoni P, Faggian G, Condorelli G*, Di Pasquale E: Lamin A/C mutations induce cardiac conduction defects through an epigenetically-mediated reduction of sodium currents: a study in a iPSC-derived model of cardiac laminopathy, Nature Comm, 2019 May 22;10(1):2267. doi: 10.1038/s41467-019-09929-w.



Type of contract

PhD scholarship of € 18.000 gross per year awarded by Humanitas University. This sum is exempt from IRPEF income tax according to the provisions of art. 4 of Law no. 476 of 13th August 1984, and is subject to social security contributions according to the provisions of art. 2, section 26 and subsequent sections, of Law no. 335 of 8th August 1995 and subsequent modifications.

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