



RESEARCH TOPIC MEM 17

Molecular mechanisms underlying circadian disruption in heart failure Curriculum MEM

Laboratory name

Circadian Metabolism Lab

Pre-clinical Supervisor

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Abstract

Mammalian physiology is temporally coordinated by the circadian clock, a cell-autonomous system responsible for daily rhythms in behaviour, physiology and metabolism. Defects in circadian rhythms influence physiology with implications for numerous pathological conditions, including cardiovascular diseases. Many aspects of cardiac physiology display diurnal rhythms, yet how these rhythms are deregulated in heart failure is unknown.

By integrating high throughput -omic approaches, we will investigate the project aims at identifying novel regulators involved in the rewiring of cardiac transcriptional and metabolic rhythms in heart failure.

Main technical approaches

Molecular mechanisms underlying circadian disruption in heart failure.

Scientific references

C. M. Greco et al., Integration of feeding behavior by the liver circadian clock reveals network dependency of metabolic rhythms. *Sci Adv* 7, eabi7828 (2021).

Greco CM, Sassone-Corsi P. "Circadian Blueprint of Metabolic Pathways in the Brain" *Nat. Rev. Neuroscience* 2019 20(2):71-82

Greco CM, Kunderfranco P, Rubino M, Larcher V, Carullo P, Anselmo A, Kurz K, Carell T, Angius A, Latronico MV, Papait P, Condorelli G*. "DNA hydroxymethylation controls cardiomyocyte gene expression in development and hypertrophy" *Nature Communications* 2016 7:12418

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.

Borsa di dottorato pari a € 18.000 annui lordi erogata da Humanitas University. Importo non soggetto a tassazione IRPEF a norma dell'art. 4 della L. 13 agosto 1984 n. 476 e soggetto, in materia previdenziale, alle norme di cui all'art. 2, commi 26 e segg., della L. 8 agosto 1995, n. 335 e successive modificazioni.