

**TOPIC PNRR1**

<b>Project title</b>	RNA Therapeutics for Heart Failure
<b>Curriculum (standard or clinical)</b>	Standard
<b>Principal Investigator</b>	Gianluigi Condorelli
<b>Lab name</b>	Inflammation and Immunology in Cardiovascular Pathologies Lab
<b>Main field of interest</b>	Cardiovascular Disease
<b>Abstract</b>	Myocardial diseases include a number of different pathologies unchained either by intrinsic, often inherited, defects of the cardiomyocyte, the contractile cellular unit of the myocardium, or by extrinsic noxae, as is the case of myocardial infarction due to coronary atherosclerosis or myocardial fibrosis following uncontrolled high blood pressure. In all cases, myocardial tissue undergoes a profound remodelling, during which the contractile tissue area is decreased and substituted by fibrotic, non-functional tissue, usually after tissue inflammation. During the course of the last decade, it has been possible to study cardiac biology at an unprecedented level. The progress in DNA sequencing technology has allowed the identification of new RNA molecules which play a critical role in many aspects of cell biology or to study myocardial cellularity at a single-cell level. RNA has emerged as a vast field of study from which therapeutic opportunities could stem. The project aims at exploiting RNA and gene therapy approaches for curing myocardial diseases.
<b>Brief description of the coherence of the Project in relation to the PNRR objectives</b>	The project aims at implementing the process of gene-therapy-based medicinal products (AGTMP) through the identification and validation of targets for RNA-based drugs, thereby enhancing the training and qualification of researchers in this emerging area of science and health.
<b>PNRR project title</b>	<b>NC for Gene Therapy and Drugs based on RNA Technology</b>
<b>CUP</b>	G43C22001360007
<b>Scientific references</b>	<p>Martini E. et al <i>Single-Cell Sequencing of Mouse Heart Immune Infiltrate in Pressure Overload-Driven Heart Failure Reveals Extent of Immune Activation</i> Circulation 2019 Dec 17;140(25):2089-2107</p> <p>Salamon I. et al <i>Divergent Transcription of the Nkx2-5 Locus Generates Two Enhancer RNAs with Opposing Functions</i> iScience 2020 Sep 6;23(9):101539</p>

<b>Required skills to carry out the project</b>	Experience in the main molecular biology techniques (RNA and DNA extraction, qPCR, western blot).