Gianluigi Condorelli

Education

1998	Specialty in Cardiology (University of Naples - Federico II)
1994	PhD in Cardiac Pathophysiology (University of Rome - Tor Vegata)
1989	MD (University of Naples - Federico II)

Professional Experience (last 10 years)

2013-present	Visiting Professor, Chair of Molecular Cardiology, University of Leicester, UK,
2012-present	Professor of Cardiology, Univesity of Milan – Statale
2012-present	Director, Cardiovascular Research, Humanitas Research Hospital
2009-2012	Adjunct Professor, University of California San Diego
2008-2012	Professor, University of Milan-Bicocca, Milan
2006-2012	Chair, Department of Medicine, Consiglio Nazionale delle Ricerche

Research Funding Agencies (last 5 years)

European Union; European Researh Council (Advanced Grant), Marie Curie Programs; National Institutes of Health, USA; Fundation LeDucq; Fondazione CARIPLO; Italian Ministry of Health; Italian Ministry of Research and University

Editorial Board Membership

Journal American College Cardiology; Circulation Research, Cardiovascular Research, Journal Molecular Cellular Cardiology; Cell Death Disease

Clinical Activities

Chair of Cardiology and attending physician, Department of Cardiovascular Medicine, Humanitas Research Hospital

Teaching

Cardiology within System Diseases, 3rd year of MIMED English Course at Humanitas Research Hospital; Post-graduate School of Cardiology, University of Milan; PhD course in Traslational and Molecular Medicine, University of Milan Bicocca.

Research Activities:

Description of research interests:

The group I supervise is interested on the molecular mechanisms of heart failure and, more broadly, of cardiovascular diseases. We study how genetics and epigenetics determine cardiovascular pathologies and, in particular, the roles of non-coding RNAs (microRNAs and, more recently, long-non coding RNAs) and histone and DNA modifications in different cardiovascular processes, in particular those affecting the myocardium. We

approach the study of cardiovascular diseases with massive DNA sequencing techniques, bioinformatics, in vitro models of human diseases (cardiomyocytes obtained from induced multipotent progenitor cells derived from patients with inherited cardiomyopathies) and miniaturized, in vivo models of diseases. Our efforts are aimed also at translating knowledge from bench to bedside; in particular, we are pursuing the identification of circulating and genetic biomarkers of cardiovascular diseases, which may be used to predict disease state or response to specific drug treatments. In addition, we are pursuing the identification of molecules that ameliorate cardiac function by interfering with basic cardiomyocyte activities. Biobanks of cardiovascular diseases are being generated with the aim to establish new prognostic and therapeutic biomarkers. Rare myocardial diseases are studied through both high-throughput sequencing for mutation identification and stem cell-generated human cardiomyocytes.

Location: Molecular genetics and biology as well as model organism programmes are based in laboratories at the "Pieve" building area of the Humanitas Research Hospital; close links are maintained with the core facilities and research groups based at the main research and educational building as well as with the clinical investigators in the hospital building.

Main institutional links: Investigators of the cardiovascular area are part of the Milan branch of the Institute of Genetics and Biomedical Research of the National Research Council of Italy and of the Humanitas Research Hospital. Teaching and PhD programmes are conducted with different universities (Milano Statale primarily, but also University of Milan Bicocca and other Universities in the Lombardia Region and in Italy). The area of cardiovascular research is composed of PIs and junior PIs supervising the activities of post-doctoral fellows, PhD students and technicians; approximately 20% of researchers come from 6 different foreign Countries.

Main international collaborations:
Department of Cardiovascular Sciences, University of Leicester, UK
Department of Medicine, University of California San Diego, La Jolla (CA) USA.
CARIM School for Cardiovascular Diseases. Maastricht University, NL
Norwegian University of Science and Technology – NTNU, Trondheim, NO.

Specific Instruments
- High frequency, high resolution VeVo 2100 digital imaging platform with linear array technology and Color Doppler Mode
- Mikro-Tip Pressure Volume System (MPVS)-Ultra Foundation System
- Telemetry for blood pressure and ECG assessment
- Scanning Ion Conductance Microscopy Optical Mapping for electrical Impulse Propagation
- IonOptix for Ca2+ transient and contractile assessment
- Patch-Clamp instruments for studies on action potential
- Tecan for liquid handling automatization

Contacts of PIs
daniele.catalucci@cnr.it
marielouise.bang@cnr.it
roberta.roncarati@irgb.cnr.it

Contacts of junior PIs
roberto.papait@irgb.cnr.it

elisa.dipasquale@irgb.cnr.it
michele.miragoli@humanitasresearch.it
leonardo.elia@humanitasresearch.it
manuela.quintavalle@humanitasresearch.it

5 representative publications:

Carè, A., Catalucci, D., Felicetti, F., Bonci, D., Ruiz-Lozano, P., Gallo, P., Segnalini, P., Bang, M.L., Dorn, G.W.2nd, Ellingsen, O., Croce, C.M., Peschle, C., and Condorelli, G.(2007): MicroRNA-133 controls cardiac myocyte hypertrophy. Nature Medicine, 13(5):613-8.

Zhang, D.H., Latronico, M.V.G., Zhang, J.L., Contu, R., Rizzi, R., Catalucci, D., Peterson, K.L., Brown, J.H., Chen, J, Sonenberg, N. and Condorelli G. (2010): mTORC-1 regulates cardiac function and myocyte survival through 4E-BP-1 inhibition. The Journal of Clinical Investigation, 120(8):2805-16

Priori, S. G., Napolitano, C., Di Pasquale, E., and Condorelli, G Induced Pluripotent Stem Cell-Derived Cardiomyocytes in the Study of Arrhythmias (2013): The Journal of Clinical Investigation, 123(1):84-91. doi: 10.1172/JCI62838

Papait, R., Cattaneo, P., Kunderfranco, P., Greco, C., Carullo, P., Guffanti, A., Viganò, V., Latronico, MVG, Hasenfuss, G., Chen, J., Condorelli, G. (2013): Genome-wide analysis of histone marks identifying an epigenetic signature and promoters and enhancers underlying cardiac hypertrophy, Proc. Natl. Acad. Sci. USA, 110(50):20164-9

Roncarati R, Anselmi CV, Losi MA, Papa L, Cavarretta E, Costa Martins PD, Jotti GS, Franzone A, Galastri L, Latronico MV, Imbriaco M, Esposito G, De Windt L, Betocchi S, Condorelli G. (2013): Circulating miR-29a, Among Other Upregulated microRNAs, is the Only Biomarker for Both Hypertrophy and Fibrosis in Patients with Hypertrophic Cardiomyopathy. J Am Coll Cardiol. doi:pii: S0735-1097(13)05589-7. 10.1016/j.jacc.2013.09.041