PERSONAL INFORMATION

Elisa Di Pasquale

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Sex: Female | *Date of birth:* 03/05/1978 | *Nationality:* Italian

WORK EXPERIENCE

09/2024 - present **Ad Interim Director** at the Institute of Genetic and Biomedical Research (IRGB), National Research Council (CNR) of Italy

05/2023 - present **Group Leader** - Cardiovascular Stem Cell Laboratory @CardioCenter, Humanitas Research Hospital, Rozzano (Milan), Italy

01/2021 - present **Tenured Scientist, First Researcher (II Level)** at the Institute of Genetic and Biomedical Research (IRGB), UOS Milan, National Research Council (CNR), Milan, Italy
Research topic: Cardiovascular stem cell biology (induced pluripotent stem cells models for the study of cardiovascular diseases and development of new therapeutic treatments)

04/2012 - present **Responsible of the iPSC Unit** at IRCCS Humanitas Research Hospital

12/2011 - 12/2020 **Tenured Scientist, Researcher III Level** at the Institute of Genetic and Biomedical Research (IRGB), UOS Milan, National Research Council (CNR), Milan, Italy

01/2008 - 12/2011 **Senior Postdoctoral Fellow** at IRCCS Multimedica – Cardiovascular Research Laboratory

11/2005 - 12/2007 **Postdoctoral Associate** at The Rockefeller University, Laboratory of Molecular Vertebrate Embryology (Brivanlou Lab), New York (USA)

11/2002 - 10/2005 **PhD student**, Laboratory of Experimental Endocrinology, IRCCS Istituto Auxologico Italiano and Institute of Endocrine Sciences, University of Milan (Italy)

EDUCATION AND TRAINING

From 2002 to 2005 **PhD in Biotechnology applied to Medical Sciences,** University of Milan, Medical School, Italy
Dissertation: “Genetic and molecular studies in natural models of altered folliculogenesis”

From 1998 to 2002 **M.Sc in Medical Biotechnology,** University of Milan, Medical School, Italy
Thesis: Role of the oocyte-specific TGF-beta factors in the ovarian folliculogenesis

WORK ACTIVITIES

National habilitations **National Scientific Qualification** for **Full Professor** *Abilitazione Scientifica Nazionale, ASN, I Fascia*). Academic Discipline: Professional sanitary and applied Medical Technologies Sciences (06/N1)
National Scientific Qualification for **Associate Professor** (*Abilitazione Scientifica Nazionale, ASN, II Fascia*). Academic Disciplines: Molecular Biology (05/E2); Applied Biology (05/F1)

Awards 2015: Premio Eccellenza – Best Oral Presentation, Italian Society of Cardiovascular Researches

(SIRC)
2011: "New Investigator" Travel Award – Basic Carciovascular Sciences (BCVS) Conference,
2006: Women & Science Postdoctoral Research Fellowship, The Rockefeller University, New York

Editorial activity

Reviewer for Cardiovascular Research, Journal of Cardiovascular Medicine, Circulation Research, Stem Cells and Development, Hearth Rhythm, Nucleus, Journal of Cellular Medicine, Frontiers for Young Minds

Review Editor on the Editorial Board of Frontiers in Bioengineering and Biotechnology (Tissue Engineering and Regenerative Medicine) and Frontiers in Cell and Development

Teaching activity

Supervisor of graduate students in Medical Biotechnology, Biology and Medicine (total students: 5)

Tutoring activity to PhD students (University of Milan, Open University -Milton Keynes, UK, Humanitas University, University of Padoa and University of Verona) (total students: 7)

Occasional teaching activity (University Elective Course in Molecular Cardiology; various ECM accredited courses)

Scientific Mentor, Frontiers for Young Minds

Presentations

Speaker at several national and international congresses, such as the European Society of Cardiology Congress (ESC), the Basic Cardiovascular Science meeting (BCVS), the conference of the International Society of Stem Cell Research (ISSCR), the Italian Society of Cardiovascular Research (SIRC), Frontiers in Cardiovascular Medicine and Gordon Research Conference on Intermediate Filaments, among others

Grants (last 5 years)

2024-2028 HORIZON-HLTH-2024-TOOL-05 – "*PHOENIX - Precision Human Organs-on-chip for Enhanced Neuro-muscular and Cardiac Studies",* € 566.000 (PI of Unit)
2023-2025 Cariplo and Telethon Joint Call for Applications 2022, GJC22040, € 160.000, (Coordinator)
2023-2025 Telethon Foundation - Multiround Call for Research Projects - I round 2022, GMR22T1093, € 159.000, (Coordinator)
2021-2024 Italian Ministry of Health – Ricerca Finalizzata, RF-2019-12370413, € 290.000 (PI of Unit)
2019-2023 H2020-FETOPEN Future Emerging Technologies, GA: 828984, € 435.000 (PI of Unit)
2018-2021 Italian Ministry of Health – Ricerca Finalizzata, RF-2009-1504427, € 230.000 (PI of Unit)
2018-2023 European Research Council, Consolidator Grant, GA: 772178, € 125.000 (PI of Unit)

Participation to Research Projects

2022-2025 Programma di Ricerca e Innovazione (PNRR), "National Center for Gene Therapy and Drugs based on RNA Technology" – CN00000041, Role: Responsible of WP activities
2017-2021 EU - H2020 - Research and Innovation action, *"CUPIDO, Cardio Ultraefficient nanoParticles for Inhalation of Drug prOducts"*, Grant Agreement n. 720834, Role: Project Participant

ADDITIONAL INFORMATION

Publications

H-index: 24, 42 publications in peer-reviewed journals, 2402 total number of citations.

- Ronchi C, Galli C, Tulli G, Marzuoli C, Mazzola M, Malferrari M, Crasto S, Rapino S, **Di Pasquale E**[#], Antognazza MR[#]. 2023. Nongenetic Optical Modulation of Pluripotent Stem Cell Derived Cardiomyocyte FUnction in the Red Spectral Range. Adv Sci, doi: 10.1002/advs.202304303 ([#]co-last authors)
- Salvarani N, Peretto G, Silvia C, Villatore A, Thairi C, Santoni A, Galli C, Carrera P, Sala S, Benedetti S, **Di Pasquale E***, Di Resta C. 2023. Functional Characterization of the Rare SCN5A p.E1225K Variant, Segregating in a Brugada Syndrome Familial Case, in Human Cardiomyocytes from Pluripotent Stem Cells. Int J Mol Sci, doi: 10.3390/ijms24119548 (*corresponding author)
- Vurro V, Federici B, Ronchi C, Florindi C, Sesti V, Crasto S, Maniezzi C, Galli C, Antognazza MR, Bertarelli C, Di Pasquale E, Lanzani G, Lodola F. 2023. Optical modulation of excitation-contraction coupling in human induced pluripotent stem-cell derived cardiomyocytes. iScience. Doi: 10.1016/j.isci.2023.106121.
- Le Dour C, Chatzifrangkeskou M, Macquart C, Magiera MM, Peccate C, Jouve C, Virtanen L, Heliö T, Aalto-Setälä K, Crasto S, Cadot B, Cardoso D, Mougenot N, Adesse D, **Di Pasquale E**, Hulot, J-S, Taimen P, Janke C. Muchir A. 2022. Actin-microtubule cytoskeletal interplay mediated by MRTF-A/SRF signaling promotes dilated cardiomyopathy caused by LMNA mutations. Nat Commun. 13(1). Doi: 10.1038/s41467-022-35639-x

- Anselmo A, Frank D, Papa L, Viviani Anselmi C, **Di Pasquale E**, Mazzola M, Panico C, Clemente F, Soldani C, Pagiatakis C, Hinkel R, Thalmann R, Kozlik-Feldmann R, Miragoli M, Carullo P, Vacchiano M, Chaves-Sanjuan A, Santo N, Losi MA, Ferrari MC, Puca AA, Christiansen V, Seoudy H, Freitag-Wolf S, Frey N, Dempfle A, Mercola M, Esposito G, Briguori C, Kupatt C, Condorelli G. 2021. Myocardial hypoxic stress mediates functional czrdiac extracellular vesicle release. Eur H J. 42(28):2780-2792. Doi: 10.1093/eurheartj/ehab247.
- My I, **Di Pasquale E**. 2021. Genetic cardiomyopathies: The lesson learned from hiPSCs. J Clin Med. 10(5). Doi: 10.3390/jcm10051149
- Salomon I, Serio S, Bianco S, Pagiatakis C, Crasto S, Chiariello AM, Conte M, Cattaneo P, Fiorillo L, Felicetta A, **Di Pasquale E**, Kunderfranco P, NicodemiM, Papait R, Condorelli G. 2020. Divergent Transcription of the Nkx2-5 Locus Generates Two Enhancer RNAs with Opposing Functions. iScience. 23(9). Doi: 10.1016/j.isci.2020.101539
- Crasto S, My I, **Di Pasquale E.** 2020. The broad spectrum of LMNA cardiac diseases: from molecular mechanisms to clinical phenotype. Front Physiol. 11:761. doi: 10.3389/fphys.2020.00761.
- Perepelina K, Kostina A, Klauzen P, Khudiakov A, Rabino M, Crasto S, Zlotina A, Fomicheva Y, Sergushichev A, Oganesian M, Dmitriev A, Kostareva A, **Di Pasquale E**, Malashicheva A. Generation of two iPSC lines (FAMRCi007-A and FAMRCi007-B) from patient with Emery-Dreifuss muscular dystrophy and heart rhythm abnormalities carrying genetic variant LMNA p.Arg249Gln. 2020. Stem Cell Res. 47:101895. doi: 10.1016/j.scr.2020.101895.
- Mazzola M, **Di Pasquale E.** 2020. Toward cardiac regeneration: combination of pluripotent stem cell-based therapies and bioengineering strategies. Front Bioeng Biotechnol. 8:455. doi: 10.3389/fbioe.2020.00455.
- Benzoni P, Campostrini G, Landi S, Bertini V, Marchina E, Iascone M, Ahlberg G, Olesen MS, Crescini E, Mora C, Bisleri G, Muneretto C, Ronca R, Presta M, Poliani PL, Piovani G, Verardi R, **Di Pasquale E**, Consiglio A, Raya A, Torre E, Lodrini AM, Milanesi R, Rocchetti M, Baruscotti M, DiFrancesco D, Memo M, Barbuti A, Dell'Era P. 2020. Human iPSC modelling of a familial form of atrial fibrillation reveals a gain of function of If and ICaL in patient-derived cardiomyocytes. Cardiovasc Res. 116(6):1147-1160. doi: 10.1093/cvr/cvz217.
- Salvarani N, Crasto S, Miragoli M, Bertero A, Paulis M, Kunderfranco P, Serio S, Forni A, Lucarelli C, Dal Ferro M, Larcher V, Sinagra G, Vezzoni P, Murry CE, Faggian G, Condorelli G, **Di Pasquale E.** 2019. The K219T-Lamin mutation induces conduction defects through epigenetic inhibition of SCN5A in human cardiac laminopathy. Nat Commun. 10(1):2267. doi: 10.1038/s41467-019-09929-w
- Di Mauro V, Crasto S, Colombo FS, **Di Pasquale E**, Catalucci D. 2019. Wnt signalling mediates miR-133a nuclear re-localization for the transcriptional control of Dnmt3b in cardiac cells. Sci Rep. 9(1):9320. doi: 10.1038/s41598-019-45818-4.
- Lodola F, Vurro V, Crasto S, **Di Pasquale E***, Lanzani G*. 2019. Optical pacing of human induced pluripotent stem cell derived-cardiomyocytes mediated by a conjugated polymer interface. Adv Healthc Mater. doi: 10.1002/adhm.201900198. (*corresponding author)
- **Di Pasquale E**, Condorelli G. 2019. Endoplasmic reticulum stress at the crossroads of progeria and atherosclerosis. EMBO Mol Med. News & Views. 11(4), e10360. doi: 10.15252/emmm.201910360
- Crasto S, **Di Pasquale E.** 2018. Induced Pluripotent Stem Cells to Study Mechanisms of Laminopathies: Focus on Epigenetics. Front Cell Dev Biol. 6:172, doi: 10.3389/fcell.2018.00172.
- Chatzifrangkeskou M, Yadin D, Marais T, Chardonnet S, Cohen-Tannoudji M, Mougenot N, Schmitt A, Crasto S, **Di Pasquale E**, Macquart C, Tanguy Y, Jebeniani I, Pucéat M, Morales Rodriguez B, Goldmann WH, Dal Ferro M, Biferi MG, Knaus P, Bonne G, Worman HJ, Muchir A. 2018. Cofilin-1 phosphorylation catalyzed by ERK1/2 alters cardiac actin dynamics in dilated cardiomyopathy caused by lamin A/C gene mutation. Hum Mol Genet 27(17):3060-3078. doi: 10.1093/hmg/ddy215.
- Kallikourdis M, Martini E, Carullo P, Sardi C, Roselli G, Greco CM, Vignali D, Riva F, Ormbostad Berre AM, Stolen TO, Fumero A, Faggian G, **Di Pasquale E**, Elia L, Rumio C, Catalucci D, Papait R, Condorelli G. 2017. T cell costimulation blockade blunts pressure overload-induced heart failure. Nat Commun 8:14680.
- Gesmundo I, Miragoli M, Carullo P, Trovato L, Larcher V, **Di Pasquale E**, Brancaccio M, Mazzola M, Villanova T, Sorge M, Taliano M, Gallo MP, Alloatti G, Penna C, Hare JM, Ghigo E, Schally AV, Condorelli G, Granata R. 2017. Growth hormone-releasing hormone attenuates cardiac hypertrophy and improves heart function in pressure overload-induced heart failure. Proc Natl Acad Sci U S A 114:12033-12038.
- Savi M, Bocchi L, Rossi S, Frati C, Graiani G, Lagrasta C, Miragoli M, **Di Pasquale E**, Stirparo GG, Mastrototaro G, Urbanek K, De Angelis A, Macchi E, Stilli D, Quaini F, Musso E. 2016.

Antiarrhythmic effect of growth factor-supplemented cardiac progenitor cells in chronic infarcted heart. Am J Physiol Heart Circ Physiol 310:H1622-1648.

- Rusconi F, Ceriotti P, Miragoli M, Carullo P, Salvarani N, Rocchetti M, **Di Pasquale E**, Rossi S, Tessari M, Caprari S, Cazade M, Kunderfranco P, Chemin J, Bang ML, Polticelli F, Zaza A, Faggian G, Condorelli G, Catalucci D. 2016. Peptidomimetic Targeting of Cavbeta2 Overcomes Dysregulation of the L-Type Calcium Channel Density and Recovers Cardiac Function. Circulation 134:534-546.
- Nakahama H, **Di Pasquale E.** 2016. Generation of Cardiomyocytes from Pluripotent Stem Cells. Methods Mol Biol 1353:181-190.
- Lodola F, Morone D, Denegri M, Bongianino R, Nakahama H, Rutigliano L, Gosetti R, Rizzo G, Vollero A, Buonocore M, Napolitano C, Condorelli G, Priori SG, **Di Pasquale E**. 2016. Adeno-associated virus-mediated CASQ2 delivery rescues phenotypic alterations in a patient-specific model of recessive catecholaminergic polymorphic ventricular tachycardia. Cell Death Dis 7:e2393.
- Cattaneo P, Kunderfranco P, Greco C, Guffanti A, Stirparo GG, Rusconi F, Rizzi R, **Di Pasquale E**, Locatelli SL, Latronico MV, Bearzi C, Papait R, Condorelli G. 2016. DOT1L-mediated H3K79me2 modification critically regulates gene expression during cardiomyocyte differentiation. Cell Death Differ 23:555-564.
- Baheiraei N, Gharibi R, Yeganeh H, Miragoli M, Salvarani N, **Di Pasquale E**, Condorelli G. 2016. Electroactive polyurethane/siloxane derived from castor oil as a versatile cardiac patch, part I: Synthesis, characterization, and myoblast proliferation and differentiation. J Biomed Mater Res A 104:775-787.
- Baheiraei N, Gharibi R, Yeganeh H, Miragoli M, Salvarani N, **Di Pasquale E**, Condorelli G. 2016. Electroactive polyurethane/siloxane derived from castor oil as a versatile cardiac patch, part II: HL-1 cytocompatibility and electrical characterizations. J Biomed Mater Res A 104:1398-1407.
- Persani L, Rossetti R, **Di Pasquale E**, Cacciatore C, Fabre S. 2014. The fundamental role of bone morphogenetic protein 15 in ovarian function and its involvement in female fertility disorders. Hum Reprod Update 20:869-883.
- Nakahama H, **Di Pasquale E**. 2014. Generation of Cardiomyocytes from Pluripotent Stem Cells. Methods Mol Biol.
- Roncarati R, Viviani Anselmi C, Krawitz P, Lattanzi G, von Kodolitsch Y, Perrot A, **di Pasquale E**, Papa L, Portararo P, Columbaro M, Forni A, Faggian G, Condorelli G, Robinson PN. 2013. Doubly heterozygous LMNA and TTN mutations revealed by exome sequencing in a severe form of dilated cardiomyopathy. Eur J Hum Genet 21:1105-1111.
- Priori SG, Napolitano C, **Di Pasquale E**, Condorelli G. 2013. Induced pluripotent stem cell-derived cardiomyocytes in studies of inherited arrhythmias. J Clin Invest 123:84-91.
- **Di Pasquale E**, Song B, Condorelli G. 2013. Generation of human cardiomyocytes: a differentiation protocol from feeder-free human induced pluripotent stem cells. J Vis Exp.
- **Di Pasquale E**, Lodola F, Miragoli M, Denegri M, Avelino-Cruz JE, Buonocore M, Nakahama H, Portararo P, Bloise R, Napolitano C, Condorelli G, Priori SG. 2013. CaMKII inhibition rectifies arrhythmic phenotype in a patient-specific model of catecholaminergic polymorphic ventricular tachycardia. Cell Death Dis 4:e843.
- Auclair S, Rossetti R, Meslin C, Monestier O, **Di Pasquale E**, Pascal G, Persani L, Fabre S. 2013. Positive selection in bone morphogenetic protein 15 targets a natural mutation associated with primary ovarian insufficiency in human. PLoS One 8:e78199.
- Rizzi R, **Di Pasquale E**, Portararo P, Papait R, Cattaneo P, Latronico MV, Altomare C, Sala L, Zaza A, Hirsch E, Naldini L, Condorelli G, Bearzi C. 2012. Post-natal cardiomyocytes can generate iPS cells with an enhanced capacity toward cardiomyogenic re-differentation. Cell Death Differ 19:1162-1174.
- **Di Pasquale E**, Latronico MV, Jotti GS, Condorelli G. 2012. Lentiviral vectors and cardiovascular diseases: a genetic tool for manipulating cardiomyocyte differentiation and function. Gene Ther 19:642-648.
- Rossetti R, **Di Pasquale E**, Marozzi A, Bione S, Toniolo D, Grammatico P, Nelson LM, Beck-Peccoz P, Persani L. 2009. BMP15 mutations associated with primary ovarian insufficiency cause a defective production of bioactive protein. Hum Mutat 30:804-810.
- **Di Pasquale E**, Brivanlou AH. 2009. Bone morphogenetic protein 15 (BMP15) acts as a BMP and Wnt inhibitor during early embryogenesis. J Biol Chem 284:26127-26136.
- Bodin L, **Di Pasquale E**, Fabre S, Bontoux M, Monget P, Persani L, Mulsant P. 2007. A novel mutation in the bone morphogenetic protein 15 gene causing defective protein secretion is associated with both increased ovulation rate and sterility in Lacaune sheep. Endocrinology 148:393-400.
- Fabre S, Pierre A, Mulsant P, Bodin L, **Di Pasquale E**, Persani L, Monget P, Monniaux D.

2006. Regulation of ovulation rate in mammals: contribution of sheep genetic models. Reprod Biol Endocrinol 4:20.

- **Di Pasquale E**, Rossetti R, Marozzi A, Bodega B, Borgato S, Cavallo L, Einaudi S, Radetti G, Russo G, Sacco M, Wasniewska M, Cole T, Beck-Peccoz P, Nelson LM, Persani L. 2006. Identification of new variants of human BMP15 gene in a large cohort of women with premature ovarian failure. J Clin Endocrinol Metab 91:1976-1979.
- **Di Pasquale E**, Beck-Peccoz P, Persani L. 2004. Hypergonadotropic ovarian failure associated with an inherited mutation of human bone morphogenetic protein-15 (BMP15) gene. Am J Hum Genet 75:106-111.

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