

## **CURRICULUM VITAE ET STUDIORUM**

*Dr. Cristina D'Aniello*

**NAME:** D'Aniello Cristina

**PLACE AND DATE OF BIRTH:** [REDACTED]

**CURRENT POSITION:** CNR Research Scientist

**OFFICE ADDRESS:** Institute of Genetics and Biophysics "A. Buzzati-Traverso" (IGB), CNR, Via Pietro Castellino 111, 80131, Naples, Italy

### **EDUCATION AND DEGREE**

**Dec 2023** National scientific qualification for Associate Professor in Applied Biology (sector ASN 05/F1) in Italian Universities, received from Italian Ministry of Education, Universities and Research (MIUR). Period: from Dec 2023 to Dec 2034.

**Jan 2011** PhD in Genetics and Molecular Medicine. University "Federico II" of Naples, Italy

**Dec 2006** Master's degree (summa cum laude) in Medical Biotechnology. University "Federico II" of Naples, Italy.

**Feb 2005** Bachelor's degree (110/110) in Biotechnology. University "Federico II" of Naples, Italy.

### **RESEARCH EXPERIENCE AND PROFESSIONAL APPOINTMENTS**

**Jul 2019-present** CNR Research Scientist, IGB-CNR, Naples, Italy.

**Sept 2018-Jul 2019** Temporary CNR Research Scientist, IGB-CNR, Naples, Italy.

**Feb 2014-Sept 2018** Senior Post-Doctoral fellow, IGB-CNR, Naples, Italy.

**May 2014-Jun 2014** Visiting fellow, Leiden University Medical Centre (LUMC), Leiden, Netherlands.

**May 2012-Dec 2013** Post-Doctoral fellow, LUMC, Leiden, Netherlands.

**Jan 2012-Apr 2012** EMBO short-term fellow (ASTF 387.00-2011), LUMC, Leiden, Netherlands.

**Dec 2010-Dec 2011** Post-Doctoral fellow, IGB-CNR, Naples, Italy.

**Nov 2007-Nov 2010** PhD fellow, IGB-CNR, Naples, Italy.

**Jan 2007-Oct 2007** Pre-doctoral fellow, IGB-CNR, Naples, Italy.

**May 2005-Dec 2006** Undergraduate student (Master thesis), IGB-CNR, Naples, Italy.

**Feb 2004-Feb 2005** Undergraduate student (Bachelor thesis), University "Federico II" of Naples, Italy.

### **FELLOWSHIPS AND AWARDS**

**Jul 2018:** InterOmics Grant to attend the EMBO Workshop "From Epigenome towards Epitranscriptome in Cell Fate Choice", October 14-17, 2018, Capri, Italy.

**May 2015:** Epigen Travel Grant to attend the "Annual Meeting of International Society for Stem Cell Research (ISSCR)", June 24-27, 2015, Stockholm, Sweden.

**Feb 2015:** Marie Curie Individual fellowship (Standard EF). Call H2020-MSCA-IF-2014\_ST (Proposal number 657398). The project received a total score of 85% (Threshold 70%). However it was not funded given the budgetary resources available under the call.

**Dec 2014:** ABCD Travel Grant to attend the Cell Biology of Disease: Cancer (CBDC) meeting", November 28-29, 2014, Parma, Italy.

**Oct 2011:** EMBO short-term fellowship (ASTF 387.00-2011) to visit the laboratory of Prof. C.L. Mummery, LUMC, Leiden, Netherlands.

**June 2010:** Poster Prize received at the National Meeting of PhD students, June 10-12, 2010, Gubbio, Italy.

**Sept 2009:** Poster Prize received at V European Summer School in "Stem Cells & Regenerative Medicine" EuroSystem, Sept 19-25, 2009, Hydra, Greece.

**Nov 2007:** PhD fellowship of the University "Federico II" of Naples, Italy.

### **SUPERVISION OF STUDENTS AND FELLOW**

**2023-present:** Supervisor of two PhD students at the IGB-CNR, Naples, Italy.

**2022-2024:** Supervisor of a CNR fellow at the IGB-CNR, Naples, Italy.

**2019-present:** Supervisor of two master students working on theses in Molecular Biology, University "Federico II" of Naples, Italy.

**2007-present:** Co-Supervisor of six master students working on theses in Developmental Biology, University “Federico II” of Naples, Italy. Co-Supervisor of one pre-doctoral fellow and one technician, IGB-CNR, Naples, Italy. Supervisor of one Erasmus master student, LUMC, Leiden, Netherlands.

### **TEACHING ACTIVITIES**

**2007-2011:** Teacher and Lecturer at the annual “Stem Cell Training Course” (Editions II-VI), IGB-CNR, Naples, Italy.

### **DISSEMINATION AND OUTREACH ACTIVITIES**

**Dec 2021:** Futuro Remoto, Science Centre, Città della Scienza, Naples, Italy.

**Nov 2020:** Futuro Remoto, IGB-CNR, Naples, Italy.

**Nov 2019:** Futuro Remoto Science Centre, Città della Scienza, Naples, Italy.

**May 2019:** Fattorie Didattiche Aperte, Istituto Zooprofilattico Sperimentale del Mezzogiorno, Naples, Italy.

**Sept 2018:** Notte dei Ricercatori, Orto Botanico, Naples, Italy.

**May 2017:** Futuro Remoto, Science Centre, Città della Scienza, Naples, Italy.

**Nov 2014:** Open day for students of the secondary school, IGB-CNR, Naples, Italy

**2007-2011/2014-present:** AIRC fundraising activities, Naples, Italy.

### **MEMBERSHIPS OF SCIENTIFIC SOCIETIES**

**2016-present:** Società Italiana di Biofisica e Biologia Molecolare (SIBBM).

**2015:** International Society for Stem Cell Research (ISSCR).

**2011-present:** Associazione di Biologia Cellulare e del Differenziamento (ABCD).

### **REVIEWER FOR INTERNATIONAL JOURNALS AND GRANT AGENCIES**

**2020-present:** Referee for International Journals such as Tumor Biology, iScience, Aminoacids, Oncogene, Frontiers in Oncology.

**2020-present:** Expert and external Evaluator for COST-Actions.

### **RESEARCH FUNDING (PI)**

- **Oct 2023-present:** PRIN 2022 (2022KME7RY). Project Title "CHANCE: Towards novel anti-fibrotic therapies via a mechanobiological investigation of human pancreatic ductal adenocarcinoma".
- **April 2022-present:** Research Contract with Chiesi Farmaceutici S.p.A (n°RDA 10509962). Project Title “Generation and characterization of lung organoids for the study of Bronchopulmonary dysplasia (BPD)”.
- **Dec 2020-Oct 2021:** Research Contract with Chiesi Farmaceutici S.p.A (n°10389185). Project Title “Effetto di corticosteroidi sulle transizioni staminali-mesenchimali”.
- **Nov 2019-June 2020:** Research Contract with Chiesi Farmaceutici S.p.A (n°10320531). Project Title “Effetto di corticosteroidi sulle transizioni staminali-mesenchimali”.

### **RESEARCH FUNDING (Participant)**

**2018-2023:** Associazione Italiana Ricerca sul Cancro (AIRC). Novel strategies to target the acquisition of mesenchymal traits in cancer cells and prevent tumor dissemination (Progetto numero: IG20736).

**2015-2019:** Unione Europea- H2020-COST-Action. Epigenetic Chemical Biology (EpichemBio) WG2.

**2012-2018:** Ministero dell'Istruzione, dell'Università e della Ricerca (MIUR)- Consiglio Nazionale delle Ricerche (CNR). Identificazione di trattamenti epigenetici innovative: caratterizzazione e reversibilità di epimutazioni nel cancro.

**2011-2014:** Associazione Italiana Ricerca sul Cancro (AIRC). Elucidating the basis of EMT in embryonic and cancer stem cells as tool for cancer therapy (Progetto numero: IG 11599).

**2008-2010:** Associazione Italiana Ricerca sul Cancro (AIRC). Development of new strategies to eliminate the risk of stem cell derived tumor formation (Progetto numero: IG 6128).

### **PARTICIPATION TO INTERNATIONAL MEETINGS AND COURSES**

1. EMBO Workshop “From Epigenome towards Epitranscriptome in Cell Fate Choice”, October 14-17, 2018, Capri, Italy, (poster presentation).

2. Cold Spring Harbor Meeting “Stem Cell Biology”, September 25-29, 2017, Cold Spring Harbor, New York, (poster presentation).
3. ”Annual Meeting of International Society for Stem Cell Research (ISSCR)”, June 24-27, 2015, Stockholm, Sweden, (poster presentation).
4. “EMBO laboratory Management Course”, April 28-30, 2014, Leimen, Germany.
5. 7<sup>th</sup> International Meeting, Stem Cell Network North Rhine-Westphalia, April 23-24, 2013, Cologne, Germany.
6. ISD meeting, “Stem Cells, Development and Regulation”, November 5-8, 2012, Amsterdam, Netherlands.
7. “Stem Cells: The diverging goals of regenerative medicine and oncology”, July 1-2, 2010 Rome, Italy, (poster presentation).
8. 22nd IGB Meeting, “Stem Cells: from molecular physiology to therapeutic application”, October 10-13, 2009, Capri, Italy, (poster presentation).
9. V European Summer School in “Stem Cell & Regenerative Medicine” EuroSystem, September 19-25, 2009, Hydra, Greece; (poster presentation).
10. EMBO/IGB Workshop: “Cell migration, Tissue Invasion and Disease”, October 14-17, 2006, Capri, Italy, (poster presentation).

#### INVITED SPEAKER AT NATIONAL MEETING

SIBBM lecture “Induction of multi- and pluripotent stem cells”, Feb 16, 2018, University “Federico II” of Naples, Italy. Title: “Beyond transcription factors: metabolic control of pluripotent stem cell metastability”.

#### ORAL PRESENTATIONS AT CONFERENCES

- 5th SIBBM Seminar Frontiers in Molecular Biology, June 4-6, 2009, Naples, Italy.
- 8th FISV, Italy, 28 September-1 October, 2006, Riva del Garda.

#### PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. Ibello E, Saracino F, Delle Cave D, Buonaiuto S, Amoroso F, Andolfi G, Corona M, Guardiola O, Colonna V, Sainz Jr B, Altucci L, De Cesare D, Cobellis G, Lonardo E, Patriarca EJ, **D’Aniello C\*** and Minchiotti G\*. Three-dimensional environment sensitizes pancreatic cancer cells to the anti-proliferative effect of budesonide by reprogramming energy metabolism. *Journal of Experimental & Clinical Cancer Research*. May 2024. doi.org/10.1186/s13046-024-03072-1. \*Co-last and co-corresponding authors.
2. Amoroso F, Ibello E, Saracino F, Cermola F, Ponticelli G, Scalera E, Francesca R, Villetti G, Cobellis G, Minchiotti G, Patriarca EJ, De Cesare D, **D’Aniello C\***. Budesonide Analogues Preserve Stem Cell Pluripotency and Delay 3D Gastruloid Development. *Pharmaceutics*. July 2023. doi.org/10.3390/pharmaceutics15071897. Corresponding author.
3. Cermola F, Amoroso F, Saracino F, Ibello E, De Cesare D, Fico A, Cobellis G, Scalera E, Casiraghi C, **D’Aniello C**, Patriarca EJ, Minchiotti G. Stabilization of cell-cell adhesions prevents symmetry breaking and locks in pluripotency in 3D gastruloids. *Stem Cell Reports*. October 27, 2022. doi.org/10.1016/j.stemcr.2022.09.01.
4. Minchiotti G, **D’Aniello C**, Fico A, De Cesare D, Patriarca EJ. Capturing Transitional Pluripotency through Proline Metabolism. *Cells*. 2022 Jul 6;11(14):2125. doi: 10.3390/cells11142125.
5. Patriarca EJ, Cermola F, **D’Aniello C**, Fico A, Guardiola O, De Cesare D, Minchiotti G. The Multifaceted Roles of Proline in Cell Behavior. *Front Cell Dev Biol*. 2021 Aug 12;9:728576. doi: 10.3389/fcell.2021.728576. eCollection 2021
6. Cermola F, D’Aniello C, Tatè R, De Cesare D, Martinez-Arias A, Minchiotti G, Patriarca EJ. Gastruloid Development Competence Discriminates Different States of Pluripotency. *Stem Cell Reports*. 2021 Jan 6:S2213-6711(20)30508-7. doi: 10.1016/j.stemcr.2020.12.013.
7. **D’Aniello C\***, Patriarca EJ, Phang JM, Minchiotti G. “Proline Metabolism in Tumor Growth and Metastatic Progression”. *Front Oncol*. 2020 May 15;10:776. doi: 10.3389/fonc.2020.00776. eCollection 2020. \*Corresponding author.
8. **D’Aniello C\***, Cermola F, Patriarca EJ, Minchiotti G. Metabolic-Epigenetic Axis in Pluripotent State Transitions. *Epigenomes*. 2019. DOI: 10.3390/epigenomes3030013. \*Corresponding author.

9. **D'Aniello C**, Cermola F, Palamidessi A, Wanderlingh LG, Gagliardi M, Migliaccio A, Varrone F, Casalino L, Matarazzo MR, De Cesare D, Scita G, Patriarca EJ, Minchiotti G. Collagen Prolyl Hydroxylation-Dependent Metabolic Perturbation Governs Epigenetic Remodeling and Mesenchymal Transition in Pluripotent and Cancer Cells. *Cancer Res.* 2019 Jul 1;79(13):3235-3250. doi: 10.1158/0008-5472.CAN-18-2070.
10. **D'Aniello C**, Cermola F, Patriarca EJ, Minchiotti G. Vitamin C in Stem Cell Biology: Impact on Extracellular Matrix Homeostasis and Epigenetics. *Stem Cells Int.* 2017;2017:8936156. doi: 10.1155/2017/8936156.
11. **D'Aniello C**, Habibi E, Cermola F, Paris D, Russo F, Fiorenzano A, Di Napoli G, Melck DJ, Cobellis G, Angelini C, Fico A, Belloch R, Motta A, Stunnenberg HG, De Cesare D, Patriarca EJ, Minchiotti G. Vitamin C and L-Proline antagonistic effects capture alternative states in the pluripotency continuum. *Stem Cell Reports.* 2017 Jan 10;8(1):1-10. doi: 10.1016/j.stemcr.2016.11.011.
12. Fiorenzano A, Pascale E, **D'Aniello C**, Acampora D, Bassalart C, Russo F, Andolfi G, Biffoni M, Francescangeli F, Zeuner A, Angelini C, Chazaud C, Patriarca EJ, Fico A, Minchiotti G. Cripto is essential to capture mouse epiblast stem cell and human embryonic stem cell pluripotency. *Nat Commun.* 2016 Sep 2;7:12589. doi: 10.1038/ncomms12589.
13. **D'Aniello C** \*, Fico A\*, Casalino L, Guardiola O, Di Napoli G, De Cesare D, Tatè R, Cobellis G, Patriarca EJ, Minchiotti G. A Novel Autoregulatory Loop Between the Gcn2-Atf4 Pathway and L-Proline Metabolism Controls Stem Cell Identity. \*Equal contributors as first author. *Cell Death Differ.* 2015 Jul;22(7):1094-105. doi: 10.1038/cdd.2015.24.
14. Ribeiro MC, Tertoolen L, Guadix JA, Bellin M, Kosmidis G, **D'Aniello C**, Monshouwer-Kloots J, Goumans MJ, Wang Y, Feinberg AW, Mummery CL and Passier R. Functional maturation of human pluripotent stem cell derived cardiomyocytes in vitro – correlation between contraction force and electrophysiology. *Biomaterials.* 2015 May;51:138-150. doi: 10.1016/j.biomaterials.2015.01.067.
15. Zhang M\*, **D'Aniello C**\*, Verkerk AO, Wrobel E, Frank S, Ward-van Oostwaard D, Piccini I, Freund C, Rao J, Seeböhm G, Atsma D., Schulze-Bahr E, Mummery CL, Greber B, and Bellin M. Recessive Cardiac Phenotypes in iPS Cell Models of Jervell and Lange-Nielson Syndrome: Disease Mechanisms and Pharmacological Rescue. \*Equal contributors as first author. *Proc Natl Acad Sci U S A.* 2014 Dec 16;111(50):E5383-92. doi: 10.1073/pnas.1419553111.
16. Bellin M, Casini S\*, Davis RP\*, **D'Aniello C**\*, Haas J, Ward-van Oostwaard D, Tertoolen LG, Jung C., Elliott DA, Welling A, Laugwitz KL, Moretti A, Mummery CL. Isogenic human pluripotent stem cell pairs reveal the role of a KCNH2 mutation in long-QT syndrome. \*Second author. *EMBO J.* 2013 Dec 11; 32(24): 3161-75. doi: 10.1038/emboj.2013.240.
17. **D'Aniello C**\*, Fiorenzano A\*, Iaconis S, Liguori GL, Andolfi G, Cobellis G, Fico A and Minchiotti G. The G-protein-coupled receptor APJ is expressed in the second heart field and regulates Cerberus-Baf60c axis in embryonic stem cell cardiomyogenesis. \*Equal contributors as first author. *Cardiovascular Research.* 2013 Oct 1; 100(1): 95-104. doi:10.1093/cvr/cvt166.
18. Farina A, **D'Aniello C**, Severino V, Hochstrasser DF, Parente A, Minchiotti G and Chambery A. Temporal proteomic profiling of embryonic stem cell secretome during cardiac and neural differentiation. *Proteomics.* 2011 Oct; 11(20): 3972-82. doi: 10.1002/pmic.201100063.
19. **D'Aniello C**, Lonardo E, Iaconis S, Guardiola O, Liguoro AM, Liguori GL, Autiero M, Carmeliet P, Minchiotti G. G Protein-Coupled Receptor APJ and Its Ligand Apelin Act Downstream of Cripto to Specify Embryonic Stem Cells Toward the Cardiac Lineage Through Extracellular Signal-Regulated Kinase/p70S6 Kinase Signaling Pathway. *Circulation Research.* 2009 Jul 31; 105(3): 231-8. DOI: 10.1161/CIRCRESAHA.109.201186.

#### **PUBLICATION IN PEER-REVIEWED CONFERENCE PROCEEDINGS**

1. **D'Aniello C**, Fico A, Casalino L, Fiorenzano A, Guardiola O, Pascale E, De Cesare D, Patriarca EJ, Minchiotti G. A key role of L-proline metabolism in the control of stem cell identity. *AMINO ACIDS.* Volume: 48; Issue: 2. Feb 2016.
2. Casini S., Bellin M., Davis R.P., **D'Aniello C.**, Haas J., Ward-van Oostwaard D., Tertoolen L.G., Laugwitz K.L., Moretti A., Mummery C.L. Isogenic Sets of Human Pluripotent Stem Cells as Model

of LQT2 Syndrome. *Biophysical Journal* 106 (2), 552a-553a. Jan 2014. DOI: 10.1016/j.bpj.2013.11.3074

3. Chambery A., Farina A., **D'Aniello C.**, Hochstrasser D.F., Parente A., Minchiotti G. Temporal proteomic profiling of embryonic stem cell secretome during cardiac and neural differentiation. *FEBS JOURNAL* 278, 408-408. June 2011.

#### **BOOK CHAPTERS**

1. Minchiotti G, **D'Aniello C**, Ronca R, Gualandi L and Dell'Era P. *Embryonic stem cells as a model system to elucidate early events in cardiac specification and differentiation*. Embryonic Stem Cells, Book 1 INTECH, ISBN 978-953-307-196-1, Edited by Prof. Craig Atwood, April 2011.