

# Curriculum Vitae

## PERSONAL INFORMATION

**Name:** Andrea Ditadi

**Unique identifiers:** <https://orcid.org/0000-0003-3283-8943>, RESEARCH ID: K-3461-2016

**Date of birth:** 15/03/1979

**Nationality:** Italian

**Lab website:** <https://research.hsr.it/en/institutes/san-raffaele-teleton-institute-for-gene-therapy/human-hematopoietic-development-and-disease-modeling/andrea-ditadi.html>

## EDUCATION

**2008:** Ph.D. in Developmental Molecular and Cell Biology (PhD school of “Genetics, Immunology, Infectiology and Development”) at University René Descartes Paris V, France. Ph.D Supervisor: Prof. Marina Cavazzana (Dec 16<sup>th</sup> 2008)

**2004:** M.S. (summa cum laude) in Medical biotechnology, University of Padua, Italy. Supervisor: Dr. Libero Vitiello (March 31<sup>st</sup> 2004)

## CURRENT POSITION

**From 11/2016:** Group Leader at The San Raffaele Telethon Institute for Gene Therapy (SR-TIGET), San Raffaele Hospital, Milan, Italy

## PREVIOUS POSITIONS

**2010 – 2016:** Postdoctoral Fellow: McEwen Centre for Regenerative Medicine, Toronto, Canada. Supervisor: Dr. Gordon Keller

**2009:** Postdoctoral Fellow: Groupe Hospitalier Necker – Enfants Malades, Paris, France. Supervisor: Dr. Isabelle André

## FELLOWSHIPS AND AWARDS

**2025:** ISSCR Public Service Award (collective)

**2018:** Institutional Pilot and Seed Award for Translational Research from San Raffaele Hospital (IT)

**2010 – 2014:** Magna-Golftown Postdoctoral Fellowship

**2006:** EGIDE Scholarship Award from The French Ministry for Foreign Affairs

## ACADEMIC SUPERVISION

### **M.S students:**

Elisa Bertesago (2019 – 2020, now Biodiversity conservationist in Santarem, Amazonas, Brasil)

Elisa Landi (2019 – 2020, now PhD student at Maastricht University)

Laura Stumpo (2020 – 2022, now PhD student at the Hubrecht Institute, NL)

Giulia Ferrari Ramondo (2022 – 2023, now research assistant in the lab; awarded a ISSCR award to attend the São Paulo School of Advanced Science on Stem Cell Biology)

Nikita Pinto (2024 – present)

Riccardo Piussi (2024 – present, awarded an Armenise-Harvard summer fellowship)

### **Ph.D students:**

Sara Cascione (2017 – 2021, now postdoctoral fellow at Leiden University, NL)

Rebecca Scarfò (2018 – 2022, now scientist at Roche, SUI)

Claudia Castiglioni (2025 – present)

### **Postdoctoral Fellows:**

Sara Maffioletti (2017 – 2022, awarded a Veronesi Foundation postdoctoral fellowship and a Marie Skłodowska-Curie Action Individual fellowship, Selected Young Scientist for the in meeting of Nobel Laureates in Lindau, now Research Strategy and Communication Officer at SR-TIGET, ITA)

Eleonora Cavalca (2018 – 2022, now Clinical Research Coordinator at the Besta Institute, ITA)

Tavosanis Andrea (2022-2024, now editor at Nature Cardiovascular Research)

Abou Alezz Monah (bioinformatician, 2020 - 2025)

Lauren Randolph (2021 – present, awarded a AIRC 3-year fellowship)

Deborah Donzel (2024 – present)

Elena Morganti (2024 – present)

## **TEACHING ACTIVITIES**

**From 2020:** Adjunct professor for “Regenerative and Molecular Medicine” course at the Master in Biotechnologies and Medical Biology at “Vita-Salute” San Raffaele University (Milan, IT).

**From 2017:** Lecturer for “Gene and Cell Therapy” course at the Master in Biotechnologies and Medical Biology at “Vita-Salute” San Raffaele University (Milan, IT).

## **ORGANISATION OF SCIENTIFIC MEETINGS**

**From 2019:** Scientific organizer of the MiStem (Milan Stem Cell Labs Network) meetings (Milan, IT)

**2020:** Scientific organizer of the seminar series “Clonal dynamics in health, disease and therapy”, at “Vita-Salute” San Raffaele University (Milan, IT)

**2018:** Scientific organizer of the seminar series “Developmental Biology: Mechanisms, Models and Applications”, at “Vita-Salute” San Raffaele University (Milan, IT)

**2022:** Scientific organizer of the seminar series “Space in biology: spatial control of cellular crosstalk in tissue homeostasis and disease”, at “Vita-Salute” San Raffaele University (Milan, IT)

**2024:** Scientific organizer of the seminar series “Pluripotent Stem Cells and Next-Generation Therapies”, at “Vita-Salute” San Raffaele University (Milan, IT)

**2025:** Member of the scientific organizing committee of the XX meeting of the SIBBM, The Italian Society of Biophysics and Molecular Biology (Naples, IT)

**2025:** Member of the scientific organizing committee of the XXII Scientific convention the Telethon Foundation (Rimini, IT)

## **INSTITUTIONAL RESPONSIBILITIES**

**From 2019:** Board Member of the “Cell and Gene Therapy” Curriculum and PhD selection committee member of the International PhD program in Molecular Medicine at University Vita-Salute San Raffaele, Milan

**2018 – 2021:** Member of “WG4: Manufacturing: Pluripotent stem cells” for the “RESTORE” Initiative of the H2020

**From 2018:** Member of the External Seminar Committee, San Raffaele Hospital (Milan, IT)

## **PROFESSIONAL ACTIVITIES AND COMMISSIONS OF TRUST**

**2011 – 2021:** Member (since 2016 co-chair) of the “Early Career Scientists Committee” of the International Society of Stem Cell Research (ISSCR; USA).

**From 2022:** Member of ISSCR focus group on “strategic planning on the promotion of scientific excellence”

**From 2024:** Member of ISSCR “Membership and International Outreach Committee” of the ISSCR

### Journal Reviewer

Nature, Nature Biotechnology, Cell Stem Cell, Nature Cell Biology, Science Immunology, Blood, Development, Stem Cell Reports, Nature Cardiovascular Research, Nature Communications, Haematologica

### Grant Reviewer

European Research Council (ERC-StG), Agence Nationale de la Recherche (ANR) AAPG Grants (France), Atip – Avenir program by INSERM (France), Leibniz Competition collaborative excellence grants (Germany), KAUST Competitive Research Grants (Saudi Arabia), Worldwide Cancer Research Grants (UK), European Hematology Association (EHA) Advanced Research Grants (the Netherlands), Wellcome Early Career Development Award (UK).

### Abstract Reviewer

Annual Meetings of the ISSCR; Annual Meetings of the EHA

## MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2006 – present: member the ISSCR

2012 – present: member the International society for experimental Hematology (ISEH)

2010 – 2016: member of the NIH initiative - Progenitor Cell Biology Consortium (PCBC)

2010 – 2016: member of the StemCell Network (SCN)

2019 – present: founding member of the Milan Stem Cell Labs Network (MiStem) initiative

## PUBLICATIONS

total citations >3700, H-index = 19

- 1) Gaudeaux P\*, Paillet J\*, Abou Alezz M, Moirangthem RD, Cascione S, Martin Corredera M, Dolens AC, De Mulder K, Velghe I, Lavaert M, Vandekerckhove B, Robil N, Corneau A, Sadek H, Rault P, Joshi A, de La Grange P, Staal FJT, Taghon T, Negre O, **Ditadi A\*§**, Andre I\*§, Soheili S\*§. Ex vivo-generated lymphoid progenitors encompass both T cell and innate lymphoid cell fates. *Front Immunol* **2025**; 16
- 2) Cascione S, Fontana E, Scarfò R, Rigoni R, Capo V, Draghici E, Dobbs K, Notarangelo LD, Villa A, **Ditadi A\*§**. Embryonic lymphocytes contribute to a genetic form of autoimmune inflammation. *bioRxiv* **2023**.11.24.568475
- 3) Luff SA, Fernandez NA, Sturgeon CM\*§, **Ditadi A\*§**. Generation of functionally distinct hemogenic endothelial cell populations from pluripotent stem cells. *Exp Hematol* **2024**. 138:104587
- 4) Scarfò R, Randolph LN, Abou Alezz M, El Khoury M, Gersch A, Li Z., Luff SA, Tavosanis A, Ferrari Ramondo G, Valsoni S, Cascione S, Didelon E, Passerini L, Amodio G, Brandas C, Villa A, Gregori S, Merelli I, Freund JN, Sturgeon CM, Tavian M\*, **Ditadi A\*§**. CD32 captures committed haemogenic endothelial cells during human embryonic development. *Nat Cell Biol* **2024**; 26(5):719-730
- 5) Montaldo E, Lusito E, Bianchessi V, Caronni N, Scala S, Basso-Ricci L, Cantaffa C, Masserdotti A, Barilaro M, Barresi S, Genua M, Vittoria FM, Barbiera G, Lazarevic D, Messina C, Xue E, Markt S, Tresoldi C, Milani R, Ronchi P, Gattillo S, Santoleri L, Di Micco R, **Ditadi A**, Belfiori G, Aleotti F, Naldini MM, Gentner B, Gardiman E, Tamassia N, Cassatella MA, Hidalgo A, Kwok I, Ng LG, Crippa S, Falconi M, Pettinella F, Scapini P, Naldini L, Ciceri F, Aiuti A and Ostuni R. Cellular and transcriptional dynamics of human neutrophils at steady state and upon stress. *Nat Immunol* **2022**; 23(10):1470-1483
- 6) Luff SA, Creamer JP, Valsoni S, Dege C, Scarfò R, Dacunto A, Cascione S, Randolph LN, Cavalca E, Merelli I, Morris S, **Ditadi A\*§** and Sturgeon CM\*§. Identification of a retinoic acid-dependent definitive hematopoietic progenitor from human pluripotent stem cells. *Nat Cell Biol* **2022**; 24(5):616-624
- 7) Atkins MH, Scarfò R, McGrath KE, Yang D, Palis J, **Ditadi A** and Keller GM. Modeling human yolk sac hematopoiesis with pluripotent stem cells. *J Exp Med* **2022**; 219(3):e20211924.
- 8) Portilho NA, Scarfò R, Bertesago E, Ismailoglu I, Kyba M, Kobayashi M, **Ditadi A\*§** and Yoshimoto M\*§. B-1 lymphocytes develop independently of Notch signaling during mouse embryonic development. *Development* **2021**; 48(15):dev199373.
- 9) Sugimura R, Jha DK, Han A, Soria-Valles C, da Rocha EL, Lu YF, Goettel JA, Serrao E, Rowe RG, Malleshiah M, Wong I, Sousa P, Zhu TN, **Ditadi A**, Keller G, Engelman AN, Snapper SB, Doulatov S, Daley GQ. Haematopoietic stem and progenitor cells from human pluripotent stem cells. *Nature* **2017**; 545(7655):432-438.
- 10) **Ditadi A**, Sturgeon CM. Directed differentiation of definitive hemogenic endothelium and hematopoietic progenitors from human pluripotent stem cells. *Methods* **2015**; S1046-2023(15)30119-5.
- 11) **Ditadi A**, Sturgeon CM, Tober J, Awong G, Kennedy M, Phillips A, Azzola L, Ng ES, Stanley E, French DL, Cheng X, Gadue P, Speck N, Elefanty AG, Keller G. Human definitive haemogenic endothelium and arterial vascular endothelium represent distinct lineages. *Nat Cell Biol* **2015**; 17(5):580-91.
- 12) Sturgeon CM, **Ditadi A**, Awong G, Kennedy M, Keller G. Wnt signaling controls the specification of definitive and primitive hematopoiesis from human pluripotent stem cells. *Nat Biotechnol* **2014**; 32(6):554-61.

- 13) Chanda B, **Ditadi A**, Iscove NN, Keller G. Retinoic acid signaling is essential for embryonic hematopoietic stem cell development. *Cell* **2013**;155(1):215-27.
- 14) Kennedy M, Awong G, Sturgeon CM, **Ditadi A**, LaMotte-Mohs R, Zuniga-Pflucker JC, Keller G. T lymphocyte potential marks the emergence of definitive hematopoietic progenitors in human pluripotent stem cell differentiation cultures. *Cell Rep* **2012**; 27;2(6):1722-35.
- 15) Sturgeon CM, Chicha L, **Ditadi A**, Zhou Q, McGrath KE, Palis J, Hammond SM, Wang S, Olson EN, Keller G. Primitive erythropoiesis is regulated by miR-126 via nonhematopoietic Vcam-1(+) Cells. *Dev Cell* **2012**; 23(1):45-57.
- 16) Rossi CA, Pozzobon M, **Ditadi A**, Archacka K, Gastaldello A, Sanna M, Franzin C, Malerba A, Milan G, Cananzi M, Schiaffino S, Campanella M, Vettor R, De Coppi P. Clonal characterization of muscle satellite cells: proliferation, metabolism and differentiation define an intrinsic heterogeneity. *PLoS One* **2010**; 1;5(1):e8523.
- 17) Lagresle-Peyrou C, Six EM, Picard C, Rieux-Laucat F, Michel V, **Ditadi A**, Demerens-de Chappedelaine C, Morillon E, Valensi F, Simon-Stoos KL, Mullikin JC, Noroski LM, Besse C, Wulffraat NM, Ferster A, Abecasis MM, Calvo F, Petit C, Candotti F, Abel L, Fischer A, Cavazzana-Calvo M. Human adenylate kinase 2 deficiency causes a profound hematopoietic defect associated with sensorineural deafness. *Nat Genet* **2010**; 41(1):106-11.
- 18) **Ditadi A**, de Coppi P, Picone O, Gautreau L, Smati R, Six E, Bonhomme D, Ezine S, Frydman R, Cavazzana-Calvo M, Andre-Schmutz I. Human and murine amniotic fluid c-Kit+Lin- cells display hematopoietic activity. *Blood* **2009**; 113(17):3953-60.
- 19) Vitiello L, Bassi N, Campagnolo P, Zaccariotto E, Occhi G, Malerba A, Pigozzo S, Reggiani C, Ausoni S, Zaglia T, Gamba P, Baroni MD, **Ditadi A**. In vivo delivery of naked antisense oligos in aged mdx mice: analysis of dystrophin restoration in skeletal and cardiac muscle. *Neuromuscul Disord* **2008**; 18(8):597-605.
- 20) Pozzobon M, Piccoli M, **Ditadi A**, Bollini S, Destro R, André-Schmutz I, Masiero L, Lenzini E, Zanesco L, Petrelli L, Cavazzana-Calvo M, Gazzola MV, De Coppi P. Mesenchymal Stromal Cells Can Be Derived from Bone Marrow CD133(+) Cells: Implications for Therapy. *Stem Cells Dev* **2009**; 18(3):497-510.
- 21) Grisafi D, Piccoli M, Pozzobon M, **Ditadi A**, Zaramella P, Chiandetti L, Zanon GF, Atala A, Zacchello F, Scarpa M, De Coppi P, Tomanin R. High transduction efficiency of human amniotic fluid stem cells mediated by adenovirus vectors. *Stem Cells Dev* **2008**; 17(5):953-62.
- 22) Beffagna G, Occhi G, Nava A, Vitiello L, **Ditadi A**, Basso C, Bauce B, Carraro G, Thiene G, Towbin JA, Danieli GA, Rampazzo A. Regulatory mutations in transforming growth factor-beta3 gene cause arrhythmogenic right ventricular cardiomyopathy type 1. *Cardiovasc Res* **2005**; 65(2):366-73.

#### Research monographs and educational papers (Reviews and Commentaries)

- 1) Castiglioni C\*, Piussi R\* and **Ditadi A**<sup>§</sup>. Charting human developmental hematopoiesis in vitro to open new routes for regenerative medicine. *Blood*, in press
- 2) Randolph LN\*, Castiglioni C\*, Taviani M, Sturgeon C and **Ditadi A**<sup>§</sup>. Bloodhounds chasing the origin of blood cells. *Trends Cell Biol* **2025**, 10:S0962-8924(25)00067-4.
- 3) Piussi R and **Ditadi A**<sup>\*§</sup>. Reaching the holy grail: making HSC in a dish. *Cellular Reprogramming* **2024**, 26(6):153-155
- 4) **Ditadi A**<sup>\*§</sup> and Sturgeon CM\*. Back to the Future: lessons from development drive innovation of human pluripotent stem cell therapies. *Exp Hematol* **2022**. \*corresponding authors
- 5) **Ditadi A**<sup>\*§</sup> and Sankaran VG\*. Vade-MECOM: How to peel back the layers of hematopoiesis. *Cell Stem Cell* **2022**;29(11):1512-1514 \*corresponding authors
- 6) Sturgeon CM<sup>\*§</sup>, **Ditadi A**<sup>\*§</sup>. Let Me Speak! A Reviewers' Guide to Writing a Successful Meeting Abstract. *Stem Cell Reports* **2018**;11(6):1324-1326.
- 7) **Ditadi A**, Sturgeon CM, Keller G. A view of human hematopoietic development from the Petri dish. *Nat Rev Mol Cell Biol* **2017**; 18(1):56-67.
- 8) Sturgeon CM, **Ditadi A**, Clarke R, Keller G. Defining the path to hematopoietic stem cells. *Nat Biotechnol* **2013**; 31:416-18.

\* denotes equal contribution; § denotes corresponding authorship; citations as in Google Scholar by Nov 10.

## Patents

- 1) WO2013075222 A1; EP 2782996 A1; CA 2856322 A1; CN 104053769 A: Populations of hematopoietic progenitors and methods of enriching stem cells therefor.  
Inventors: Keller G, Zuniga-Pflucker JC, Kennedy M, Sturgeon CM, **Ditadi A**, Awong G.
- 2) WO2020154412 A1; EP20744306.0A; CA3127593A: Methods to Obtain Retinoic Acid-Dependent Hematopoietic Progenitors from Human Pluripotent Stem Cells  
Inventors: Sturgeon CM, **Ditadi A**.
- 3) WO2023247722 A1: Methods for isolating hemogenic endothelial cells. Inventor: **Ditadi A**, Scarfò R.
- 4) Filed invention disclosure: Enforced expression of three miRNAs (miR-125b, miR-99a and miR-155) in cord blood CD34+ cells and pluripotent stem cell-derived hematopoietic progenitors to promote megakaryocyte development.  
Inventors: Dick J, Keller G, Lechman E, **Ditadi A**.

## Selected invited lectures as PRINCIPAL INVESTIGATOR

- 2017:** Weatherall Institute (Oxford, UK) – hosted by Dr. De Bruijn  
ASGCT - 20th Annual Meeting (Washington, US)  
Hemogenic Endothelium and Hematopoietic Stem Cells Symposium (Les treilles - FR)  
Gordon Research Conference on Red Cells (Newport, US)  
Harvard Medical School (Boston, US) – hosted by Dr. Sankaran  
B cell winter school (Lohr-am-Main, DE)
- 2018:** IRIBHM (Bruxelles, BE) – hosted by Dr. Wittamer  
EMBL (Rome, IT) – hosted by Dr. Lancrin  
CBI (Toulouse, FR) – hosted by Dr. Gleizes  
Fondazione Città della Speranza (Padua, IT) – hosted by Dr. Viola
- 2019:** Karolinska Institutet (Stockholm, SV) – hosted by Dr. Lundin
- 2020:** Hematopoiesis G20 meeting (virtual)
- 2021:** TIGEM (Naples, IT) – hosted by Dr. Cacchiarelli
- 2022:** Black Family Stem Cell Institute (New York, US) – hosted by Dr. Sturgeon  
hPSC hematopoiesis symposia (Seattle, US)
- 2023:** XXI Telethon Convention (Riva del Garda, IT)
- 2024:** Lund Stem Cell Stars (Lund, SV)  
University of Padua (Padua, IT) – hosted by Dr. Martello  
CorEUSem meeting (Rotterdam, NL)  
Crick symposium “Stemness, Regeneration and Immunity: from development to therapy” (London, UK)  
Cambridge Stem Cell Center (Cambridge, UK) – hosted by Dr. Laurenti
- 2025:** Human Techopole (Milan, IT) – hosted by Dr. Faga  
HT Neurogenomics Conference  
hPSC-derived hematopoiesis symposium (Kumamoto, JP)
- 2026:** Human development: Stem cells, Models, Embryos (Warwick, UK)

## Selected oral communications as PRINCIPAL INVESTIGATOR

- 2017:** ISSCR Annual Meeting (Boston, US)  
ISEH Annual Meeting (Frankfurt, DE)
- 2020:** ISSCR Annual Meeting (Virtual)  
ISEH Annual Meeting (Virtual)
- 2023:** ISEH Annual Meeting (New York, US)
- 2025:** EHA Annual Meeting (Milan, ITA)

## Other selected invited presentations to international conferences and seminars

Invited sessions: ISEH - 41st Annual Scientific Meeting (Amsterdam – Netherlands) – 2012; NIH PCBC - 7th Annual Meeting (Houston - Texas - US)

Selected oral communications: Keystones Symposia Hematopoiesis 2011, 2015; NIH PCBC 2012; ISSCR Annual Meeting 2015

**Seminars:** 2014: Institute Imagine (Paris); 2015: Centre for Chronic Immunodeficiencies (Freiburg), MRC Center for Regenerative Medicine (Edinburgh), St. Jude's Research Hospital (Memphis), Berlin Institute of Health (Berlin), Cambridge Stem Cell Institute (Cambridge), Center for Regenerative Therapies (Dresden), Max Plank Institute for Immunobiology and Epigenetics (Freiburg), 2016: Black Family Stem Cell Institute (New York), Tokyo University (Tokyo)

**Grant awarded as Principal Investigator**

**2016:** Italian Telethon Foundation (5 years), Italian MOH (3 years)

**2017:** French AFM (3 years)

**2018:** WWCR (3 years), Italian MOH (3 years)

**2019:** EU-EJPRD (3 years)

**2021:** EHA BCG (2 years)

**2022:** Italian Telethon Foundation (5 years); **ERC-CoG** (5 years)

**2025:** ERDERA (3 years)