

BIOGRAPHICAL SKETCH

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NAME: Silvia Nucera

eRA COMMONS USER NAME (credential, e.g., agency login):

POSITION TITLE: Project Leader, Ricercatore sanitario IRCCS San Gerardo dei Tintori

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Università degli Studi Milano-Bicocca, Monza, Italy	70/70 cum laude	06/10/2021	Residency in Pediatrics
Università Vita Salute San Raffaele, Milano, Italy	110/110 magna cum laude	07/17/2012	Medical Doctor

A. Personal Statement

My research focuses on post-transplant immune reconstitution. As a Pediatric hematologist with a strong research background, my research is mainly translational, joining biological and clinical aspects.

My group is currently developing advanced spectral flow cytometric antibody panels in collaboration with EuroFlow Consortium to dissect post-transplant immune reconstitution and we are setting up unsupervised clustering analysis pipelines for complex spectral panels.

We also work in close collaboration with HSCT Team, trying to develop tools that can facilitate daily work and trying to analyze data to answer to clinical questions. In particular, we recently developed an application to score and record data from patients with GvHD (Sindoni...& Nucera, BMT 2025) that is currently used both in clinical practice and in the context of a prospective multicentric study.

We recently developed an innovative technique to study chimerism in immune cell subsets (Nucera*, Sindoni* et al., 2023) and aim to assess the impact of mixed chimerism in post-transplant setting to prevent leukemia relapse.

My research group is currently composed of two PhD students (respectively 1st year and 2nd year), one master student and a resident in Pediatrics.

B. Positions, Scientific Appointments, and Honors

Ricercatore sanitario, Fondazione IRCCS San Gerardo dei Tintori, 2025-ongoing

Title of the project: "Prospective study for the evaluation of immune-reconstitution in patients undergoing HSCT for acute lymphoblastic leukemia".

Postdoctoral Fellow, Dr. Giuseppe Gaipa's laboratory, Fondazione Tettamanti, Università Milano-Bicocca, 2021-2023

Title of the project: "Prospective study for the evaluation of immune-reconstitution in patients undergoing HSCT for acute lymphoblastic leukemia".

Postdoctoral Fellow, Prof. Giovanni Cazzaniga's laboratory, Fondazione Tettamanti, Università Milano-Bicocca, 2020-2021

Title of the project: "A mechanistic role for MicroRNA-126 in pediatric acute lymphoblastic leukemias".

Postdoctoral Fellow, Prof. Luigi Naldini's and Dr. Gentner's laboratory, Università Vita-Salute San Raffaele, Milan, 2012-2015

Title of the project: "A mechanistic role for MicroRNA-126 in acute leukemias".

Undergraduate Student, Prof. Michele De Palma's group, Luigi Naldini's laboratory, Università Vita-Salute San Raffaele, Milan, 2008-2012

Title of the project: "development of TIE2-expressing macrophages and their role in tumors and in other diseases".

C. Contributions to Science

Publications on peer-reviewed journals:

- Marco M. Sindoni, Francesca Limido, Anita Toso, Giovanna Lucchini, Giuseppe Gaipa, Adriana Balduzzi and **Silvia Nucera**. aGvHDtrackR and cGvHDtrackR: shiny applications for graft versus host disease management and clinical data collection. Bone Marrow Transplantation, 2025. Doi 10.1038/s41409-025-02509-1
- Licari E, Cricri G, Mauri M, Raimondo F, Dioni L, Favero C, Giussani A, Starace R, **Nucera S**, Biondi A, Piazza R, Bollati V, Dander E, D'Amico G. ActivinA modulates B-acute lymphoblastic leukaemia cell communication and survival by inducing extracellular vesicles production. Sci Rep. 2024 Jul 12;14(1):16083. doi: 10.1038/s41598-024-66779-3. PMID: 38992199
- **Nucera S**#, Sindoni MM*, Bugarin C, Villa T, Biondi A#, Balduzzi A, Gaipa G. A novel flow-cytometric based method to assess post-HSCT donor chimerism exploiting RNA hybridization. Bone Marrow Transplant. 2024 Feb;59(2):171-177. doi: 10.1038/s41409-023-02143-9. Epub 2023 Nov 7. PMID: 37935782. *co-first authors; # co-corresponding authors.
- Carolina Caserta#, **Silvia Nucera**#, Matteo Barcella, Grazia Fazio, Matteo Maria Naldini, Riccardo Pagani, Francesca Pavesi, Giacomo Desantis, Erika Zonari, Mariella D'Angiò, Paola Capasso, Angelo Lombardo, Ivan Merelli, Orietta Spinelli, Alessandro Rambaldi, Fabio Ciceri, Andrea Biondi, Giovanni Cazzaniga# and Bernhard Gentner#. # equal contribution. "miR-126 identifies a quiescent and chemo-resistant cell subset in human B-ALL that correlates with minimal residual disease". Leukemia 2023, doi: 10.1038/s41375-023-02009-5
- **Nucera, Silvia**; Fazio, Grazia; Piazza, Rocco; Rigamonti, Silvia; Fontana, Diletta; Gambacorti Passerini, Carlo; Maitz, Silvia; Rovelli, Attilio; Biondi, Andrea; Cazzaniga, Giovauni; Balduzzi, Adriana Germ-Line TP53 Mutation in an Adolescent With CMML/Atypical CML and Familial Cancer Predisposition, HemaSphere: October 2020 - Volume 4 - Issue 5 - p e460 doi: 10.1097/HS9.0000000000000460
- Evaluation of hemodynamics in healthy term neonates using ultrasonic cardiac output monitor Daniela Doni*, **Silvia Nucera***, Camilla Rigotti, Elena Arosio, Valeria Cavalleri, Monica Ronconi, Maria Luisa Ventura, Tiziana Fedeli. Ital J Pediatr. 2020; 46: 112. *co-corresponding authors
- **Nucera S**, Giustacchini A, Boccalatte F, Calabria A, Fanciullo C, Plati T, Ranghetti A, Garcia-Manteiga J, Cittaro D, Benedicenti F, Lechman ER, Dick JE, Ponzoni M, Ciceri F, Montini E, Gentner B, Naldini L. miRNA-126 Orchestrates an Oncogenic Program in B Cell Precursor Acute Lymphoblastic Leukemia. Cancer Cell. 2016 Jun 13;29(6):905-921. doi: 10.1016/j.ccell.2016.05.007. PMID: 27300437.
- miR-126 Regulates Distinct Self-Renewal Outcomes in Normal and Malignant Hematopoietic Stem Cells. Eric R. Lechman*, Bernhard Gentner*, Stanley W.K. Ng#, Erwin M. Schoof#, Peter van Galen#, James A. Kennedy#, **Silvia Nucera**#, Kerstin B. Kaufmann, Naoya Takayama, Stephanie M. Dobson, Aaron Trotman-Grant, Gabriela Krivdova, Janneke Elzinga, Amanda Mitchell, Weihsu Claire Chen, Bjorn Nilsson, Karin G. Hermans, Kolja Eppert, ReneMarke, Ruth Isserlin, Veronique Voisin, Gary D. Bader, Peter W. Zandstra, Todd R. Golub, Benjamin L. Ebert, Jun Lu, Mark Minden, Jean C.Y. Wang, Luigi Naldini and John E. Dick. Cancer Cell 2016.
- TIE2-expressing monocytes/macrophages regulate revascularization of the ischemic limb. Patel AS, Smith A, **Nucera S**, Bizziato D, Saha P, Attia RQ, Humphries J, Mattock K, Grover SP, Lyons OT, Guidotti LG, Siow R, Ivetic A, Egginton S, Waltham M, Naldini L, De Palma M, Modarai B. EMBO Mol Med. 2013 Jun;5(6):858-69. doi: 10.1002/emmm.201302752. Epub 2013 May 7.
- Circulating endothelial progenitors and tumor resistance to vascular-targeting therapies. De Palma M, **Nucera S**. Cancer Discov. 2012 May;2(5):395-7. doi: 10.1158/2159-8290.CD-12-0137.
- The interplay between macrophages and angiogenesis in development, tissue injury and regeneration. **Nucera S**, Bizziato D, De Palma M. Int J Dev Biol. 2011;55(4-5):495-503. doi: 10.1387/ijdb.103227sn. Review.
- TIE2-expressing macrophages limit the therapeutic efficacy of the vascular-disrupting agent combretastatin A4 phosphate in mice. Welford AF*, Bizziato D*, Coffelt SB, **Nucera S**, Fisher M, Pucci F, Di Serio C, Naldini L, De Palma M, Tozer GM, Lewis CE. J Clin Invest. 2011 May;121(5):1969-73. doi: 10.1172/JCI44562. Epub 2011 Apr 1.

Manuscripts in preparation/under revision:

Marco M. Sindoni*, Anita Toso*, Francesca Limido, Cristina Bugari, Tiziana Villa, Sarah Bonte, Yvan Saeys, Chiara Buracchi, Giulia Prunotto, Virginia Meda Spaccamela, Mathias Hauri, Oscar Maglia, Simona Sala, Domenico Gaspari, Grazia Fazio, Andrea Biondi, Adriana Balduzzi#, Silvia Nucera## and Giuseppe Gaipa. # Co-corresponding authors; * Equal contribution. Impact of ATLG on CD4+ T Cell Reconstitution After HSCT: A Detailed Immune Profiling Study. Under revision in Cytotherapy (revision submitted May 9)

Taymour Hammoudi*, **Silvia Nucera***, Alexandre G. Troullioud Lucas*, Marc Ansari, Adriana Balduzzi, Alice Bertaina, Jochen Buechner, Selim Corbacioglu, Jean-Hugues Dalle, Krzysztof Kalwak, Dean Lee, John E. Levine, Caroline Lindemans, Franco Locatelli, Roland Meisel, Stefan Nierkens, Giorgio Ottaviano, Antonio Perez-Martinez, Herbert Pichler, Susan Prockop, Michael A. Pulsipher, Julie-An Talano, Sanjay Tewari, Kirk R. Schultz, Nirali N. Shah, Michael R. Verneris^, Jaap Jan Boelens^ on behalf of the Westhafen Intercontinental Group. * Equal contribution. Harmonized Immune Recovery Monitoring after HCT: Evidence & Practical Guidance from the Westhafen Intercontinental Group. Under revision in Blood Advances.

Marianna Ponzio*, Lorenzo Drufuca*, Chiara Buracchi, Marco M. Sindoni, **Silvia Nucera**, Cristina Bugarin, Ramona Bason, Grazisa Rossetti, Raoul Bonnal, Cristian Meli, Benedetta Rambaldi, Federico Lussana, Silvia Ferrari, Alex Moretti, Giuseppe Dastoli, Giulia Risca, Christian Pellegrino, Markus G. Manz, Stefania Galimberti, Alessandro Rambaldi, Giuseppe Gaipa, Andrea Biondi, Massimiliano Pagani, Chiara F. Magnani Acquisition of an immunosuppressive microenvironment after CAR-T therapy drives T-cell dysfunction and resistance. Under revision on Journal of Immunotherapy of Cancer (revision submitted May 22)

Ardisson Anna Ferrera Giulia, Bonanomi Sonia, Farina Laura, Ciano Claudia, **Nucera Silvia**, Moscatelli Marco, Venerando Anna, Patrini Mara, Rossi Sebastiano Davide, Gellera Cinzia, Balduzzi Adriana Cristina, Salsano Ettore, Moroni Isabella, Rovelli Attilio. Long Term Neurological Outcome After Hematopoietic Stem Cell Transplant in Juvenile Krabbe Disease. Under revision in Neurology.

Book chapters:

Nucera, S., Limido, F., Balduzzi, A. (2024). HSCT in the First CR and in the Subsequent CRs: Indications and Conditioning Regimens. In: Escherich, G., Conter, V. (eds) Acute Lymphoblastic Leukemia in Children and Adolescents. Pediatric Oncology. Springer, Cham. https://doi.org/10.1007/978-3-031-71180-0_17