Sabrina Carrella, PhD

Born in Naples (Italy), 25/03/1985

e-mail: sabrina.carrella@szn.it

Current Position: Ricercatrice III livello

Current Affiliation:
Ecosustainable Marine Biotechnology Department, Stazione Zoologica Anton Dohrn, Napoli (Italy)

Education/Training/Experience

INSTITUTION AND LOCATION	DEGREE	YEAR	FIELD OF STUDY
University of the Study of Naples Federico II, Naples, Italy	MS	07/2008	Molecular Biology
University of the Study of Naples Federico II, Naples, Italy	PhD	12/2012	Molecular Medicine
Telethon Institute of Genetics and Medicine (TIGEM), Pozzuoli (NA) and Univerisity of Campania Luigi Vanvitelli, Naples, Italy	Postdoctoral Associate Researcher	2013-2021	Human Genetics, Neuroscience
Stazione Zoologica Anton Dohrn, Naples, Italy	Tenured Researcher	2021-present	Ecosustainable Marine Biotechnology

Honors

2008	Winner of PhD Fellowship, European School of Molecular Medicine (SEMM)
2010	Graziella Persico Travel Award, Institute of Genetics and Biophysics "A. Buzzati-Traverso" – CNR Naples
2010	ESHG Young Investigator Award, Scientific Programme Committee at European Human Genetics Conference 2010
2013	Winner of two-year fellowship, MIUR and TIGEM
2015	Winner of three-year Research Associate fellowship, Università della Campania Luigi Vanvitelli
2019	Winner of one-year Research Associate Fellowship Università della Campania Luigi Vanvitelli

2021 Winner of tenured researcher position at the "Stazione Zoologica-Anton Dohrn", Naples, Italy

Additional Information

Research Support:

- "AAV-Sponge-mediated modulation of microRNA-181a/b: a potential therapeutic approach for Inherited Retinal Disease." Foundation Fighting Blindness. Funding period: 1/6/19-31/5/22. Role: Participant
- "miR-181a/b modulation as potential therapeutic approach for AMD treatment" BrightFocus Foundation. Funding period: 1/11/20-31/10/22. Role: Principal Investigator (until 30/11/2021)
- "MicroRNA expression modulation: a new therapeutic avenue for Inherited Retinal Diseases" Velux Stiftung Foundation. Funding period: 1/11/20-31/10/23. Role: Co-Principal Investigator
- "CRISPR/Cas9 microRNAs Editing as gene-independent therapeutic approach in Inherited Retinal Dystrophies (IRDs)" AFM-Telethon Trampoline grant. Funding period: 1/12/20-30/11/21. Role: Principal Investigator

Supervision and Training Activities:

2012-2013: training activity for Dr Ylenia D'Agostino, Master Degree in Biology, University of Naples Federico II, Naples (Italy)
2015-2017: training activity for Dr Ludovica Ciampi, Master Degree in Medical Biotechnology, University of Naples Federico II, Naples (Italy)
2017-2018: training activity for Dr Davide Piccolo, Master Degree in Biology, University of Naples Federico II, Naples (Italy)
2019-present: co-tutor activity for Dr Georgios Petrogiannakis, PhD program in "Molecular Life Science-Human Genetics", University of Campania "Luigi Vanvitelli" and TIGEM (Telethon Institute of Genetics and Medicine), Naples (Italy)
2020-present: co-tutor activity for Dr Martina Di Guida, PhD program in "Scienze Biomolecolari", University of Campania "Luigi Vanvitelli" and TIGEM (Telethon Institute of Genetics and Medicine), Naples (Italy)
2021: training activity for Dr Dalila Capasso, PhD program in "Genomic and Experimental Medicine", Scuola Superiore Meridionale, Naples (Italy)
2020-present: supervisor activity for Dr Simona Brillante, postdoc in the project "miR-181a/b modulation as potential therapeutic approach for AMD treatment" (BrightFocus Foundation)
2020-2021: supervisor activity for Dr Irene Guadagnino, postdoc in the project "MicroRNA expression modulation: a new therapeutic avenue for Inherited Retinal Diseases" (Velux Stiftung Foundation)
2021-2022: thesis tutor and training activity for Dr Eva Cipollaro, Master Degree in Genetics and Molecular Biology, Sapienza University, Rome (Italy)
2021-2022: training activity for Dr Paola Quadrano, pre-doctoral fellow in the project "CRISPR/Cas9 microRNAs Editing as gene-independent therapeutic approach in Inherited Retinal Dystrophies (IRDs)" (AFM-Telethon Trampoline)
2021: supervisor and training activity for Dr Marta Molinari, pre-doctoral fellow in the project "miR-181a/b modulation as potential therapeutic approach for AMD treatment" (BrightFocus Foundation)

2020-present: External member of the thesis committee in the PhD program at Centre for Genomic Regulation (CRG) in Barcelona. Student name: Dr Ludovica Ciampi, Title of the thesis project: "MIRAS: bringing the MIcroexons Retina-specific Alternative Splicing program to light"

2020, 2021: Lecturer for the specialistic course "miRNAs in mitochondrial diseases" of second year in the PhD program at TIGEM (SEMM-European School of Molecular Medicine, Genomic and Experimental Medicine, Federico II, Vanvitelli and OPEN University)
2021: Lecturer in the Research Training workshop as part of an "Innovative Training Network" grant. Title of the course: "Implementation of Novel Therapies for IRD"

Other:

- Patent: "mir-181 inhibitors and uses thereof" (WO/2019/202162) 20th of April, 2018
- Member of the examining commission for the public competition number IRGB/AR/002/2021MI; Project: SAC.AD002.020.031, at IRGB- Istituto di Ricerca Genetica e Biomedica (CNR)
- Topic Editor: Research Topic" Rare and common neurodegenerative retinal diseases: from molecular mechanisms to the identification of novel mutation-independent therapeutic strategies". Frontiers In Aging Neuroscience
- Reviewer activities: MDPI (International Journal of Molecular Science, Genes, Pharmaceuticals and Cells), Inflammation Research, European Journal of Neuroscience, and Molecular Therapy
- Dissemination activities: From 2014 to 2019, Scientific dissemination at TIGEM laboratories to schools and/or to civil society; December 5th 2015, Partecipation at "Il non vedente del terzo millennio" Convention, Naples, Italy; December 21st 2018, Scientific dissemination about Retinitis Pigmentosa at "Uno Mattina", Studi Rai, Rome, Italy
- 2019-2020: Member of Association for research Vision and Ophtalmology (ARVO)
- 2015-2016: Member of American Society of Cell Biology
- June-October 2016: Maternity leave
- January-June 2019: Maternity leave

Publications

1. Conte I, **Carrella S**, Avellino R, Karali M, Marco-Ferreres R, Bovolenta P, Banfi S. (2010) "miR-204 is required for lens and retinal development via Meis2 targeting." Proc Natl Acad Sci U S A 107: 15491-15496

2. R. Avellino, **S. Carrella**, M. Pirozzi, M. Risolino, Salierno FG, P. Franco, P. Stoppelli, P. Verde, S. Banfi, I.Conte (2013) "miR-204 targeting of Ankrd13A controls both mesenchymal neural crest and lens cell migration" PLoS One 8: e61099

3. Poulter JA, Al-Araimi M, Conte I, van Genderen MM, Sheridan E, Carr IM, Parry DA, Shires M, **Carrella S**, Bradbury J, Khan K, Lakeman P, Sergouniotis PI, Webster AR, Moore AT, Pal B, Mohamed MD, Venkataramana A, Ramprasad V, Shetty R, Saktivel M, Kumaramanickavel G, Tan A, Mackey DA, Hewitt AW, Banfi S, Ali M, Inglehearn CF, Toomes C. (2013) "Recessive Mutations in SLC38A8 Cause Foveal Hypoplasia and Optic Nerve Misrouting without Albinism."Am J Hum Genet 93: 1143-1150

4. Ivan Conte, Stefania Merella, Jose Manuel Garcia Manteiga, Chiara Migliore, Dejan Lazarevic, **Sabrina Carrella**, Raquel Marco-Ferreres, Raffaella Avellino, Davidson Nathan Paul, Warren Emmett, Remo Sanges, Nicholas Bockett, David Van Heel, Germana Meroni, Paola Bovolenta, Sandro Banfi, Elia Stupka. (2014) "The combination of transcriptomics and informatics identifies pathways targetted by miR-204 during neurogenesis and axon guidance". Nucleic Acids Res 42: 7793-7806.

5. **Sabrina Carrella**, Ylenia D'Agostino, Sara Barbato, Sabina P. Huber-Reggi, Francesco Giuseppe Salierno, Anna Manfredi, Stephan C.F. Neuhauss, Sandro Banfi, Ivan Conte (2015). "miR-181a/b control the assembly of visual circuitry by regulating retinal axon specification and growth". Dev Neurobiol 75: 1252-1267.

6. Ivan Conte, Kristen D Hadfield, Sara Barbato, **Sabrina Carrella**, Mariateresa Pizzo, Louise F Porter, Sofie Hateley, James O'Sullivan, Forbes Manson, Stephan C.F. Neuhauss, Sandro Banfi, Graeme C M Black (2015). "MiR-204 is responsible for inherited retinal dystrophy associated with ocular coloboma". Proc Natl Acad Sci U S A 112: E3236-3245.

7. **Sabrina Carrella**, Sara Barbato, Ylenia D'Agostino, Francesco Giuseppe Salierno, Anna Manfredi, Sandro Banfi, Ivan Conte (2015). "TGF-β controls miR-181/ERK regulatory network during retinal axon specification and growth." PlosOne 10(12):e0144129.

8. Alessia Indrieri†, **Sabrina Carrella†,** Alessia Romano, Alessandra Spaziano, Elena Marrocco, Erika Fernandez-Vizarra, Sara Barbato, Mariateresa Pizzo, Yulia Ezhova, Francesca M. Golia, Ludovica Ciampi, Roberta Tammaro, Jorge Henao-Mejia, Adam Williams, Richard A. Flavell, Elvira De Leonibus, Massimo Zeviani, Enrico M. Surace, Sandro Banfi*, Brunella Franco*. "miR-181a/b downregulation exerts a protective action on Mitochondrial Disease models". EMBO Molecular Medicine, 2019 † co-first authors; *co-corresponding authors

9. Alessia Indrieri, **Sabrina Carrella**, Pietro Carotenuto, Sandro Banfi and Brunella Franco. "The Pervasive Role of the miR-181 Family in Development, Neurodegeneration, and Cancer." Int J Mol Sci. 2020

10. **Sabrina Carrella*,** Alessia Indrieri, Brunella Franco, Sandro Banfi*. "Mutation-Independent Therapies for Retinal Diseases: Focus on Gene-Based Approaches". Front Neurosci. 2020 *co-corresponding authors

11. **Sabrina Carrella*,** Sandro Banfi*, Marianthi Karali *. "Sophisticated gene regulation for a complex physiological system: the role of non-coding RNAs in photoreceptor cells". Front Cell Dev Biol. 2021 *co-corresponding authors

12. Anna Barbato, Antonella Iuliano, Mariagrazia Volpe, Romina D'Alterio, Simona Brillante, Filomena Massa, Rossella De Cegli, **Sabrina Carrella**, Massimiliano Salati, Annapina Russo, Giulia Russo, Sara Riccardo, Davide Cacchiarelli, Mariaelena Capone, Gabriele Madonna, Paolo A. Ascierto, Brunella Franco, Alessia Indrieri and Pietro Carotenuto. "Integrated Genomics Identifies miR-181/TFAM Pathway as a Critical Driver of Drug-resistance in Melanoma" Int. J. Mol. Sci. 2021

13. **Sabrina Carrella*,** Filomena Massa, Alessia Indrieri*. "microRNAs in mitochondrial-related eye diseases" Front Cell Dev Biol. 2021 *co-corresponding authors

14. Gianmarco Nocera, Gaetano Viscido, Simona Brillante, **Sabrina Carrella** and Diego di Bernardo. "The VersaLive platform enables microfluidic mammalian cell culture for versatile applications"
bioRxiv 2021.07.02.450869 doi: https://doi.org/10.1101/2021.07.02.450869 (submitted, reference number: COMMSBIO-21-2696-T)

15. Ludovica Ciampi, Sarah Head, Federica Mantica, Antonio Torres-Mendez, Sophie Bonnal, Cristina Rodriguez, Jon Permanyer, Laura Lopez-Blanch, Jinjjing Zang, **Sabrina Carrella**, Luis Serrano Pubul* and Manuel Irimia*. "Functional specialization of the photoreceptor transcriptome by SRRM3 is required for outer segment maintenance and vision in zebrafish" bioRxiv 2021.09.08.459463; doi: https://doi.org/10.1101/2021.09.08.459463 (submitted, reference number: PNAS MS#2021-17090) *co-corresponding authors