

# Cristina Barbagallo

| Gender: Female Nationality: Italian | Email address: [cristina.barbagallo@unict.it](mailto:cristina.barbagallo@unict.it) | Website: <https://www.biometec.unict.it/docenti/cristina.barbagallo> | Address: Via Santa Sofia 97, 95123, Catania, Italy (Work)

## Teaching Experience

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**Professor of the course Gamete biology and human reproduction for the Master's Degree in Medical Biotechnologies** | 01/10/2025 - Current

Department of Biomedical and Biotechnological Sciences, University of Catania

**Professor of the Cellular Biotechnology course for the Master's Degree in Experimental and Applied Biology** | 06/10/2022 - Current

Department of Biological, Geological, and Environmental Sciences, University of Catania

**Professor of the Biology and Genetics course, module of the integrated course in Chemistry and Biochemistry, Biology and Genetics for the Nursing Degree** | 10/02/2021 - Current

Department of Medical, Surgical Sciences and Advanced Technologies, University of Catania

**Supervisor and co-supervisor of undergraduate and graduate theses**

Advisor and co-advisor for several undergraduate and graduate theses for students enrolled in the Biotechnology, Medical Biotechnology, and Experimental and Applied Biology degree programs.

## Work experience

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**Assistant Professor of Experimental Biology** | Department of Biomedical and Biotechnological Sciences, University of Catania | 01/10/2025 - Current | Catania, Italy

**Research fellowship "Isolation and characterization of extracellular vesicles from liquid biopsy"** | Department of Biomedical and Biotechnological Sciences, University of Catania | 02/10/2023 - 30/09/2025 | Catania, Italy

**Research fellowship "Pathogenic involvement of non-coding RNAs in human Diabetes Mellitus"** | Department of Clinical and Experimental Medicine, University of Catania | 21/10/2020 - 20/10/2022 | Catania, Italy

**Research scholarship "Identification of serum miRNAs as prognostic markers of Exudative Macular Degeneration"** | Department of General Surgery and Medical-Surgical Specialties, University of Catania | 21/10/2019 - 20/10/2020 | Catania

**Qualified tutor** | Bachelor Degree in Exercise and Sport Sciences, University of Catania | 04/12/2018 - 02/05/2019 | Catania, Italy

**Qualified tutor** | Master Degree in Medical Biotechnologies, University of Catania | 19/02/2018 - 19/10/2018 | Catania, Italy

## Education & Training

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**Visiting scientist** | Department of Biomedical and Biotechnological Sciences, University of Catania | 24/11/2017 - 30/09/2019 | Catania, Italy

**PhD in Translational Biomedicine** | University of Catania | 01/11/2013 - 08/03/2017 | Catania, Italy

Curriculum "Molecular, Genomic and Complex Systems BioMedicine: Cellular and Molecular Bases of Phenotype"

**Licensed as Professional Biologist** | University of Catania | 01/2014 | Catania, Italy

Government qualifying exam at University of Catania

**Master Degree in Cellular and Molecular Biology (grade 110/110 cum laude)** | University of Catania | 2011 - 2013 | Catania, Italy

**Bachelor Degree in Biological Sciences (grade 110/110 cum laude)** | University of Catania | 2006 - 2011 | Catania, Italy

## Publications

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## Full list of publications

- Ragusa M, Statello L, Maugeri M, Barbagallo C, Passanisi R, Alhamdani MS, Li Destri G, Cappellani A, Barbagallo D, Scalia M, Valadi H, Hoheisel JD, Di Pietro C, Purrello M. Highly skewed distribution of miRNAs and proteins between colorectal cancer cells and their exosomes following Cetuximab treatment: biomolecular, genetic and translational implications. *Oncoscience*. 2014 Mar 16;1(2):132-57.
- Ragusa M, Barbagallo C, Statello L, Caltabiano R, Russo A, Puzzo L, Avitabile T, Longo A, Toro MD, Barbagallo D, Valadi H, Di Pietro C, Purrello M, Reibaldi M. miRNA profiling in vitreous humor, vitreal exosomes and serum from uveal melanoma patients: Pathological and diagnostic implications. *Cancer Biol Ther*. 2015;16(9):1387-96.
- Ragusa M, Barbagallo C, Statello L, Condorelli AG, Battaglia R, Tamburello L, Barbagallo D, Di Pietro C, Purrello M. Non-coding landscapes of colorectal cancer. *World J Gastroenterol*. 2015 Nov 7;21(41):11709-39.
- Maugeri M, Barbagallo D, Barbagallo C, Banelli B, Di Mauro S, Purrello, Magro G, Ragusa M, Di Pietro C, Romani M, Purrello M. Altered expression of miRNAs and methylation of their promoters are correlated in Neuroblastoma. *Oncotarget*. 2016; 7:83330-83341.
- Russo A, Ragusa M, Barbagallo C, Longo A, Avitabile T, Uva MG, Bonfiglio V, Toro MD, Caltabiano R, Mariotti C, Boscia F, Romano MR, Di Pietro C, Barbagallo D, Purrello M, Reibaldi M. miRNAs in the vitreous humor of patients affected by idiopathic epiretinal membrane and macular hole. *PLoS One*. 2017 Apr 20;12:e0176618.
- Cirnigliaro M, Barbagallo C, Gulisano M, Domini CN, Barone R, Barbagallo D, Ragusa M, Di Pietro C, Rizzo R, Purrello M. Expression and Regulatory Network Analysis of miR-140-3p, a New Potential Serum Biomarker for Autism Spectrum Disorder. *Front Mol Neurosci*. 2017 Aug 10;10:250.
- Ragusa M, Barbagallo C, Cirnigliaro M, Battaglia R, Brex D, Caponnetto A, Barbagallo D, Di Pietro C, Purrello M. Asymmetric RNA Distribution among Cells and Their Secreted Exosomes: Biomedical Meaning and Considerations on Diagnostic Applications. *Front Mol Biosci*. 2017 Oct 4;4:66. doi: 10.3389/fmolb.2017.00066.
- Ragusa M, Barbagallo C, Brex D, Caponnetto A, Cirnigliaro M, Battaglia R, Barbagallo D, Di Pietro C, Purrello M. Molecular crosstalking among non-coding RNAs: a new network layer of genome regulation in cancer. *Int J Genomics*. 2017;2017:4723193. doi: 10.1155/2017/4723193.
- Di Pietro V, Porto E, Ragusa M, Barbagallo C, Davies D, Forcione M, Logan A, Di Pietro C, Purrello M, Grey M, Hammond D, Sawlani V, Barbey AK, Belli A. Salivary MicroRNAs: Diagnostic Markers of Mild Traumatic Brain Injury in Contact-Sport. *Front Mol Neurosci*. 2018; 11:290. doi: 10.3389/fnmol.2018.00290.
- Barbagallo C, Brex D, Caponnetto A, Cirnigliaro M, Scalia M, Magnano A, Caltabiano R, Barbagallo D, Biondi A, Cappellani A, Basile F, Di Pietro C, Purrello M, Ragusa M. LncRNA UCA1, upregulated in CRC biopsies and downregulated in serum exosomes, controls mRNA expression by RNA-RNA interactions. *Mol Ther Nucleic Acids*. 2018 Sep 7;12:229-241. doi: 10.1016/j.omtn.2018.05.009.
- Barbagallo C, Passanisi R, Mirabella F, Cirnigliaro M, Costanzo A, Lauretta G, Barbagallo D, Bianchi C, Pagni F, Castorina S, Granata A, Di Pietro C, Ragusa M, Malatino L, Purrello M. Upregulated microRNAs in membranous glomerulonephropathy are associated with significant downregulation of IL6 and MYC mRNAs. *J Cell Physiol*. 2019 Aug;234(8):12625-12636. doi: 10.1002/jcp.27851.
- Spampinato SF, Merlo S, Fagone E, Fruciano M, Barbagallo C, Kanda T, Sano Y, Purrello M, Vancheri C, Ragusa M, Sortino MA. Astrocytes Modify Migration of PBMCs Induced by  $\beta$ -Amyloid in a Blood-Brain Barrier in vitro Model. *Front Cell Neurosci*. 2019 Jul 23;13:337. doi: 10.3389/fncel.2019.00337.
- Barbagallo C, Mostile G, Baglieri G, Giunta F, Luca A, Raciti L, Zappia M, Purrello M, Ragusa M, Nicoletti A. Specific Signatures of Serum miRNAs as Potential Biomarkers to Discriminate Clinically Similar Neurodegenerative and Vascular-Related Diseases. *Cell Mol Neurobiol*. 2019 Nov 6. doi: 10.1007/s10571-019-00751-y.
- Toro MD, Reibaldi M, Avitabile T, Bucolo C, Salomone S, Rejdak R, Nowomiejska K, Tripodi S, Posarelli C, Ragusa M, Barbagallo C. MicroRNAs in the vitreous humor of patients with retinal detachment and a

different grading of proliferative vitreoretinopathy: a pilot study. *Trans. Vis. Sci. Tech.* 2020;9(6):23. doi: <https://doi.org/10.1167/tvst.9.6.23>.

Barbagallo C, Di Martino MT, Grasso M, Salluzzo MG, Scionti F, Cosentino F, Caruso G, Barbagallo D, Di Pietro C, Ferri R, Caraci F, Purrello M, Ragusa M. Uncharacterized RNAs in Plasma of Alzheimer's Patients Are Associated with Cognitive Impairment and Show a Potential Diagnostic Power. *Int. J. Mol. Sci.* 2020, 21, 7644; doi:10.3390/ijms21207644.

Broggi G, Russo A, Reibaldi M, Russo D, Varricchio S, Bonfiglio V, Spatola C, Barbagallo C, Foti PV, Avitabile T, Longo A, Caltabiano R. Histopathology and Genetic Biomarkers of Choroidal Melanoma. *Appl. Sci.* 2020, 10(22), 8081; <https://doi.org/10.3390/app10228081>.

Barbagallo C, Caltabiano R, Broggi G, Russo A, Puzzo L, Avitabile T, Longo A, Reibaldi M, Barbagallo D, Di Pietro C, Purrello M, Ragusa M. LncRNA LINC00518 Acts as an Oncogene in Uveal Melanoma by Regulating an RNA-Based Network. *Cancers* 2020, 12(12), 3867; <https://doi.org/10.3390/cancers12123867>.

Torrisi SA, Lavanco G, Maurel OM, Gulisano W, Laudani S, Geraci F, Grasso M, Barbagallo C, Caraci F, Bucolo C, Ragusa M, Papaleo F, Campolongo P, Puzzo D, Drago F, Salomone S, Leggio GM. A novel arousal-based individual screening reveals susceptibility and resilience to PTSD-like phenotypes in mice. *Neurobiol Stress.* 2020 Dec 24;14:100286. doi: 10.1016/j.yjnstr.2020.100286.

Brex D, Barbagallo C, Mirabella F, Caponnetto A, Battaglia R, Barbagallo D, Caltabiano R, Broggi G, Memeo L, Di Pietro C, Purrello M, Ragusa M. LINC00483 has a potential tumor-suppressor role in Colorectal Cancer through multiple molecular axes. *Front. Oncol.* 10:614455. doi: 10.3389/fonc.2020.614455.

Maurel OM, Torrisi SA, Barbagallo C, Purrello M, Salomone S, Drago F, Ragusa M, Leggio GM. Dysregulation of miR-15a-5p, miR-497a-5p and miR-511-5p Is Associated with Modulation of BDNF and FKBP5 in Brain Areas of PTSD-Related Susceptible and Resilient Mice. *Int J Mol Sci.* 2021 May 13;22(10):5157. doi: 10.3390/ijms22105157.

Barbagallo C, Di Maria A, Alecci A, Barbagallo D, Alaimo S, Colarossi L, Ferro A, Di Pietro C, Purrello M, Pulvirenti A, Ragusa M. VECTOR: An Integrated Correlation Network Database for the Identification of CeRNA Axes in Uveal Melanoma. *Genes (Basel).* 2021 Jun 29;12(7):1004. doi: 10.3390/genes12071004.

Barbagallo C, Platania CBM, Drago F, Barbagallo D, Di Pietro C, Purrello M, Bucolo C, Ragusa M. Do Extracellular RNAs Provide Insight into Uveal Melanoma Biology? *Cancers (Basel).* 2021 Nov 25;13(23):5919. doi: 10.3390/cancers13235919.

Barbagallo C, Stella M, Broggi G, Russo A, Caltabiano R, Ragusa M. Genetics and RNA Regulation of Uveal Melanoma. *Cancers (Basel).* 2023 Jan 26;15(3):775. doi: 10.3390/cancers15030775.

Barbagallo C, Stella M, Ferrara C, Caponnetto A, Battaglia R, Barbagallo D, et al. RNA-RNA competitive interactions: a molecular civil war ruling cell physiology and diseases. *Explor Med.* 2023;4:504–40. <https://doi.org/10.37349/emed.2023.00159>.

Garmaa G, Bunduc S, Kóí T, Hegyi P, Csupor D, Ganbat D, Dembrovszky F, Meznerics FA, Nasirzadeh A, Barbagallo C, Kökény G. A Systematic Review and Meta-Analysis of microRNA Profiling Studies in Chronic Kidney Diseases. *Noncoding RNA.* 2024 May 3;10(3):30. doi: 10.3390/ncrna10030030.

Porreca V, Barbagallo C, Corbella E, Peres M, Stella M, Mignogna G, Maras B, Ragusa M, Mancone C. Unveil Intrahepatic Cholangiocarcinoma Heterogeneity through the Lens of Omics and Multi-Omics Approaches. *Cancers (Basel).* 2024 Aug 20;16(16):2889. doi: 10.3390/cancers16162889.

Stella M, Russo GI, Leonardi R, Carcò D, Gattuso G, Falzone L, Ferrara C, Caponnetto A, Battaglia R, Libra M, Barbagallo D, Di Pietro C, Pernagallo S, Barbagallo C, Ragusa M. Extracellular RNAs from Whole Urine to Distinguish Prostate Cancer from Benign Prostatic Hyperplasia. *Int J Mol Sci.* 2024 Sep 19;25(18):10079. doi: 10.3390/ijms251810079.

## Honours and awards

"Guido Tarone" Award for Young Researcher awarded by Associazione Italiana Biologia e Genetica generale e molecolare (AIBG) during the XVIII National Congress of Associazione Italiana Biologia e Genetica generale e molecolare (AIBG) - Ferrara, September 22, 2018.

## Editorial activity

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### Editorial Board Member for International Journal of Molecular Sciences - Section 'Molecular Genetics and Genomics'

[https://www.mdpi.com/journal/ijms/sectioneditors/genetics\\_genomics?search=Cristina+Barbagallo](https://www.mdpi.com/journal/ijms/sectioneditors/genetics_genomics?search=Cristina+Barbagallo)

### Guest Editor for International Journal of Molecular Sciences

- Special Issue "Roles and Mechanisms of Non-coding RNAs in Human Health and Disease" ([https://www.mdpi.com/journal/ijms/special\\_issues/ncRNA\\_Neurodevelopmental](https://www.mdpi.com/journal/ijms/special_issues/ncRNA_Neurodevelopmental))
- Special Issue "Non-Coding RNAs in Human Neurodevelopmental Disorders and Brain Disorders" ([https://www.mdpi.com/journal/ijms/special\\_issues/54F447KH36](https://www.mdpi.com/journal/ijms/special_issues/54F447KH36))
- Special Issue "Non-Coding RNAs in Human Neurodevelopmental Disorders and Brain Disorders": 2nd Edition ([https://www.mdpi.com/journal/ijms/special\\_issues/YGL03L3OKN](https://www.mdpi.com/journal/ijms/special_issues/YGL03L3OKN))

### Guest Editor for Exploration of Medicine

Special Issue "RNA World in Health and Disease"

([https://www.explorationpub.com/Journals/em/Special\\_Issues/104](https://www.explorationpub.com/Journals/em/Special_Issues/104))

### Guest Editor for Frontiers in Molecular Biosciences

Special Issue "Membranes and Organelles in Communication: Contact Sites, Extracellular Vesicles, and Mitochondrial Transfer"

(<https://www.frontiersin.org/research-topics/76673/membranes-and-organelles-in-communication-contactsites-extracellular-vesicles-and-mitochondrial-transfer>)