

Greta Petrella
Post-doctoral Research Fellow
Department of Chemical Science and Technology
University of Rome "Tor Vergata"
Via della Ricerca Scientifica, 1,
00133, Rome, Italy
email: petrella@scienze.uniroma2.it

CURRICULUM VITAE

EDUCATION

Ph.D. – Chemical Science

Period: Nov 2017 – Jan 2021

Institute: Department of Chemical Science and Technology,
University of Rome "Tor Vergata," Italy

Thesis title: "Metabolomics and Bladder Cancer. Risk factors and prognosis of the most common cancer of the urinary tract."

Supervisor: Prof. Daniel Oscar Cicero

Final mark: Excellent cum laude

Master's degree - Chemistry

Period: Nov 2013 – Oct 2016

Institute: Department of Chemical Science and Technology,
University of Rome "Tor Vergata," Italy

Thesis title: "Effetto dell'occlusione coronarica sul profilo metabolico del siero arterioso"

Supervisor: Prof. Daniel Oscar Cicero

RESEARCH EXPERIENCE AND CURRENT POSITION

2022 - current

Quality Control Support and Team Leader of "NMR Methods"
LabCAP (laboratorio accreditato ISO 9001:2015) dell'University of Rome "Tor Vergata"

May 2023 – Apr 2025

Post-doctoral research fellow

Department of Chemical Science and Technology, University of Rome "Tor Vergata," Italy

"Study of cancer cell metabolism for new drug discovery"

May 2021 - Apr 2023

Post-doctoral research fellow

Department of Chemical Science and Technology, University of Rome "Tor Vergata," Italy

"Study of urinary metabolic markers for bladder cancer prognosis"

Nov 2020 - Apr 2021

Scholarship

IRBM Science Park, Pomezia (RM), Italy

Nuclear Magnetic Resonance Laboratory

"Metabolomics studies by NMR spectroscopy"

Sep 2018 – Nov 2018

Visiting Ph.D. student

- Nov 2017 - Jan 2021
IRCCS San Raffaele Hospital, Urological Research Institute,
Milan, Italy
Ph.D. student
Department of Chemical Science and Technology, University of
Rome "Tor Vergata", Italy
- Jan 2017 - Nov 2017
Scholarship
IRBM Science Park, Pomezia (RM), Italy.
Nuclear Magnetic Resonance Laboratory
"Metabolomics studies by NMR spectroscopy"
- Feb 2016 - Oct 2016
Visiting master student
IRBM Science Park, Pomezia (RM), Italy
Nuclear Magnetic Resonance Laboratory

CURRENT RESEARCH INTEREST

Metabolomics, Nuclear Magnetic Resonance, Cancer Metabolism, Pharmacometabolomics

AWARDS

- Sep 2021
GIDRM Ph.D. Graduate Award at the 2021 competition organized by GIDRM (1000,00 €), presenting the thesis entitled: Metabolomics and Bladder Cancer.
- 2014
BIOMOD, Harvard University

EDITORIAL ACTIVITY

- 2022 - current
Member of the Topical Advisory Panel of "Metabolites"
- 2022
Guest Editor of the special issue: "Cellular Metabolism in the Omics Era."
A special issue of Metabolites (ISSN 2218-1989). This special issue belongs to the section "Cell Metabolism".
- 2022
Guest Editor of the special issue: "Is Cancer a Metabolic Disease? The Answer of Metabolomics Volume 2"
A special issue of Metabolites (ISSN 2218-1989). This special issue belongs to the section "Frontiers in Metabolomics".

TEACHING ACTIVITY

- Oct 2022 - current
Laboratory Instructor "Drug Analysis module I" (4/8 CFU), degree in pharmacy, Department of Biology, University of Rome "Tor Vergata", Italy
- Oct 2022 - current
Instructor "Organic Chemistry III" (3/6 CFU), bachelor's degree in chemistry, Department of Chemical Science and Technology, University of Rome "Tor Vergata", Italy

Mar 2022 - current

Instructor (3/6 CFU) "Chemometrics and applications", master's degree in chemistry, Department of Chemical Science and Technology, University of Rome "Tor Vergata", Italy

Mar 2021 - current

Tutor "NMR spectroscopy of organic molecules", master's degree in chemistry, Department of Chemical Science and Technology, University of Rome "Tor Vergata", Italy

STUDENT SUPERVISION

Nine bachelor's students and three master's students from 2021 to 2023.

BIBLIOMETRIC DATA:

Total number of publications in peer-reviewed journals: 17

H-Index: 7

Total number of book chapters: one in press

LIST OF PUBLICATIONS

17. Stefanizzi, V.; Minutolo, A.; Valletta, E.; Carlini, M.; Cordero, F.M.; Ranzenigo, A.; Prete, S.P.; Cicero, D.O.; Pitti, E.; **Petrella, G.**; Matteucci, C.; Marino-Merlo, F.; Mastino, A.; Macchi, B. Biological Evaluation of Triorganotin Derivatives as Potential Anticancer Agents. *Molecules*, 28, 3856 (2023).
16. **Petrella, G.** (co-first and corresponding author); Corsi, F.; Ciufolini, G.; Germini, S.; Capradossi, F.; Pelliccia, A.; Torino, F.; Ghibelli, L.; Cicero, D.O. Metabolic Reprogramming of Castration-Resistant Prostate Cancer Cells as a Response to Chemotherapy. *Metabolites*, 13, 65 (2023).
15. Viceconte, N.; **Petrella, G.** (co-first author); Pelliccia, F.; Tanzilli, G.; Cicero, D.O. Unraveling Pathophysiology of Takotsubo Syndrome: The Emerging Role of the Oxidative Stress's Systemic Status. *J. Clin. Med.*, 11, 7515 (2022).
14. Palmieri, E., Pescosolido, F., Montaina, L., Carcione, R., **Petrella, G.**, Cicero, D.O, Tamburri, E., Battistoni, S., Orlanducci, S. A Sustainable Hydroxypropyl Cellulose-Nanodiamond Composite for Flexible Electronic Applications. *Gels* 8 (12):783 (2022).
13. Fustaino, V., Gimmelli, R., Guidi, A., Lentini, S., Saccoccia*, F., **Petrella, G.*** (co-corresponding author), Cicero, D. O., & Ruberti, G. Comparative metabolic profiling by ¹H-NMR spectroscopy analysis reveals the adaptation of *S. mansoni* from its host to in vitro culture conditions: a pilot study with ex vivo and GSH supplemented medium-cultured parasites. *Parasitology Research* 121, 1191–1198 (2022).
12. Vanni, D., Viceconte, N., **Petrella, G.**, Biccirè, F. G., Pelliccia, F., Tanzilli, G., & Cicero, D. O. A pilot study on the ¹H-NMR serum metabolic profile of takotsubo patients reveals systemic response to oxidative stress. *Antioxidants* 10, (2021).
11. **Petrella, G.**, Montesano, C., Lentini, S., Ciufolini, G., Vanni, D., Speziale, R., Salonia, A., Montorsi, F., Summa, V., Vago, R., Orsatti, L., Monteagudo, E., & Cicero, D. O. Personalized metabolic profile by synergic use of NMR and HRMS. *Molecules* 26, (2021).
10. Carbone, K., Macchioni, V., **Petrella, G.**, Cicero, D. O. & Micheli, L. Humulus lupulus cone extract efficacy in alginate-based edible coatings on the quality and nutraceutical traits of fresh-cut kiwifruit. *Antioxidants* 10, (2021).

9. **Petrella, G.**, Ciufolini, G., Vago, R. & Cicero, D. O. Urinary metabolic markers of bladder cancer: A reflection of the tumor or the response of the body? *Metabolites* 11, (2021).
8. Caroleo, F. ; **Petrella, G.** (co-first author); Di Zazzo, L.; Nardis, S.; Berionni Berna, B.; Cicero, D.O.; Paolesse, R. A Leopard Cannot Change Its Spots: Unexpected Products from the Vilsmeier Reaction on 5,10,15-Tritolylcorrole. *Molecules*, 25, 3583 (2020).
7. Guidi, A., **Petrella, G.** (co-first author), Fustaino, V., Saccoccia, F., Lentini, S., Gimmelli, R., Di Pietro, G., Bresciani, A., Cicero, D. O., & Ruberti, G. Drug effects on metabolic profiles of schistosoma mansoni adult male parasites detected by 1h-nmr spectroscopy. *PLoS Neglected Tropical Diseases* 14, 1–20 (2020).
6. Carbone, K., De Angelis, A., Mazzuca, C., Stantangelo, E., Macchioni, V., Cacciotti, I., **Petrella, G.**, Cicero, D.O., Micheli, L. Microwave-assisted synthesis of catalytic silver nanoparticles by hyperpigmented tomato skins: A green approach. *LWT* 133, (2020).
5. **Petrella, G.**, Ciufolini, G., Vago, R. & Cicero, D. O. The interplay between oxidative phosphorylation and glycolysis as a potential marker of bladder cancer progression. *International Journal of Molecular Sciences* 21, 1–13 (2020).
4. Carbone, K., Macchioni, V., **Petrella, G.** & Cicero, D. O. Exploring the potential of microwaves and ultrasounds in the green extraction of bioactive compounds from *Humulus lupulus* for the food and pharmaceutical industry. *Industrial Crops and Products* 156, (2020).
3. Pitti, E., **Petrella, G.**, Di Marino, S., Summa, V., Perrone, M., D'Ottavio, S., Bernardini, A., & Cicero, D. O. Salivary Metabolome and Soccer Match: Challenges for Understanding Exercise induced Changes. *Metabolites*, 9(7), 141 (2019).
2. Caroleo, F., Nardis, S., **Petrella, G.**, Bischetti, M., Cicero, D.O., Genovese, D., Mummolo, L., Prodi, L., Randazzo, R., D'Urso, A. and Paolesse, R. 5,10,15-Tris(4-sulfonatophenyl) corrole Synthesis. *Eur. J.Org. Chem.*, 2019: 6525-6533 (2019).
1. **Petrella, G.**, Mazzuca, C., Micheli, L., Cervelli, E., Fazio, D.D., Iannuccelli, S., Sotgiu, S., Palleschi, G., & Palleschi, A. A new sustainable and innovative work for paper artworks cleaning process: Gellan hydrogel combined with hydrolytic enzymes. *International Journal Of Conservation Science*, 7(1), 273-280. (2016).

ORAL PRESENTATIONS

- Sept 2023** "A personalized urinary metabolic profile for bladder cancer patients: an application of the SYNHMET method". XXVIII National Meeting on Medicinal Chemistry, Società Chimica Italiana, Chieti (Italy)
- Oct 2022** "Cell metabolism in the omics era: a study on the occurrence of chemoresistance in neuroendocrine prostate cancer cells" 3rd Edition of World Congress on Endocrinology, diabetes, and metabolism, London (UK)
- Sep 2022** "Metabolism evolution of prostate cancer cells during the development of chemoresistance." GIDRM, XLX National Congress on Magnetic Resonance, Milan (Italy)

- Sep 2021** "The synergic use of UHPLC-HRMS and NMR in metabolomics." GIDRM, XLIX National Congress on Magnetic Resonance, Online
- Nov 2019** "How could NMR data assist MS hit classification in an untargeted metabolomics analysis? Our case study: bladder cancer." Advances in NMR and MS Based Metabolomics, GIDRM and iMASS, Lucca (Italy)
- Sep 2018** "A comprehensive urinary metabolomic approach based on NMR and LC-HRMS to identify bladder cancer." GIDRM, XLVII National Congress on Magnetic Resonance, Torino (Italy)
- Oct 2015** "A new sustainable and innovative work for paper artworks cleaning process." YOCOCU, Green Conservation of Cultural Heritage, Rome (Italy)

POSTER PRESENTATIONS

- 2023** New psychoactive substances: a study of urinary metabolic changes of opioid-treated mice by SYNHMET method. Petrella G., Ciufolini G., Cortese F., Montesano C., Di Francesco G., Sergi M., Marti M., Cicero D.O. – 50th National Congress on Magnetic Resonance, Univeristà di Roma La Sapienza (Italy)
- 2023** The application of NMR and UHPLC-HRMS in determining the most accurate and complete urinary metabolic profile. G. Petrella, G. Ciufolini, F. Cortese, C. Montesano, G. Di Francesco, M. Sergi, M. Marti, D.O. Cicero - GIDRM DAY: quantitative and non-targeted nmr for the protection of health and food, Bari (Italy)
- 2023** Microplastics in marine sediments facing a river mouth: identification and quantification through the Nuclear Magnetic Resonance spectroscopy. Papini G., Petrella G., Cicero D.O., Boglione C., Rakaj A. "Recent Trends in Microplastic Research", COST Project PRIORITY (Jena, Germany)
- 2023** Cellular metabolism and risk stratification in bladder cancer. G. Ciufolini, A. Ruberti, G. Petrella, V. Pasquale, S. Rota, G. Ducci, G. Campioni M. Bonanomi, R. Vago, E. Sacco, M. Vanoni, D.O. Cicero. Gordon Research Conference, Examining the Intersection Between Systemic and Cellular Metabolism and Lifestyle Factors to Understand Health and Disease, Barga (Italy)
- 2023** Cellular metabolism in the omics era: metabolic reprogramming of castration-resistant prostate cancer cells as a response to chemotherapy. Petrella, G., Corsi, F., Ciufolini, G., Germini, S., Capradossi, F., Pelliccia, A., Torino, F., Ghibelli, L., and Cicero, D.O., Gordon Research Conference, Examining the Intersection Between Systemic and Cellular Metabolism and Lifestyle Factors to Understand Health and Disease, Barga (Italy)
- 2022** Contribution of 3D architecture to the energy metabolism of bladder cancer cellular Models. V. Pasquale, G. Ducci, G. Campioni, S. Rota, E. Arrigoni, S. Busti, M. Bonanomi, G. Ciufolini, G. Petrella, R. Vago, D.O. Cicero, D. Gaglio, E. Sacco and M. Vanoni. 1st Workshop of the SIB group "Tumor Biochemistry" From genes to

metabolites through proteins: dealing with human health and disease, Univeristà di Milano Bicocca (Italy)

- 2021** Preliminary contribution to the quantitative evaluation of polystyrene microplastics in the marine sediments facing the mouth of the Tiber River. Papini G., Boglione C., Petrella G., Cicero D.O., Rakaj A. 'Ecology for an Ecological Transition' – XXX Congresso della Società Italiana di Ecologia, Lecce (Italy)
- 2021** Triorganotin derivatives act as metabolic inhibitors towards oral squamous cell carcinoma (OSCC) cells through suppression of glucose uptake. Beatrice Macchi, Elena Valletta, Antonella Minutolo, Claudia Matteucci, Franca Cordero, Oscar Daniel Cicero, Greta Petrella, Francesca Marino-Merlo, Antonio Mastino. 3rd MMCS: Shaping Medicinal Chemistry for the New Decade
- 2021** NMR plasma metabolomics and lipidomics can anticipate cardiac ischemic risk. D. Vanni, E. Pitti, G. Petrella, N. Viceconte, G. Tanzilli, D.O.Cicero. XLIX National Congress on Magnetic Resonance, GIDRM, Online, 2021
- 2021** Exo-metabolomics fingerprint of bladder cancer progression using 1H-NMR. G. Ciufolini, G. Petrella, R. Vago, D. O. Cicero. XLIX National Congress on Magnetic Resonance, Online, 2021
- 2019** Drug effects on metabolic profiles of Schistosoma mansoni adult male parasites by 1HNMR spectroscopy. G. Petrella, A. Guidi, V. Fustaino, S. Lentini, G. Di Pietro, F Saccoccia, R Gimmelli, A. Bresciani, D.O. Cicero, and G.Ruberti. XLVIII National Congress on Magnetic Resonance, L'Aquila (Italy)
- 2019** A comprehensive urinary metabolomic approach based on NMR and LC–HRMS to identify bladder cancer. G. Petrella, S. Lentini, G. Di Pietro, L. Orsatti, C. Montesano, R. Speziale, V. Summa, A.Salonia, R. Vago, E.S. Monteagudo, D.O. Cicero. Gordon Conference, Metabolomics and Human Health, Ventura (California, USA)
- 2018** Metabolomic Study of Urinary Biomarkers in Bladder Cancer Based on NMR Spectroscopy. G. Petrella, S. Lentini, G. Di Pietro, L. Orsatti, C. Montesano, R. Speziale, V. Summa, A.Salonia, R. Vago, D.O. Cicero. Baveno (Italy)
- 2017** Drug effects on metabolic profiles of Schistosoma mansoni adult male parasites by 1HNMR spectroscopy. A. Guidi, S. Lentini, G. Di Pietro, F Saccoccia, G. Petrella, R Gimmelli, A. Bresciani, D.O. Cicero, and G. Ruberti. Advances in NMR and MS Based Metabolomics, GIDRM, Padova (Italy)
- 2017** A Metabolomic Study of Urinary Biomarkers in Bladder Cancer based on NMR Spectroscopy. G. Petrella, S. Lentini, G. Di Pietro, V. Summa, A. Salonia, R. Vago, D.O. Cicero. "Advances in NMR and MS Based Metabolomics", GIDRM, Padova (Italy)
- 2016** The effect of coronary occlusion on arterial serum metabolites. D.O. Cicero, G. Petrella, C.S. Di Marino, V. Summa, N. Viceconte, G. Tanzilli, L. Iannetta, E. Mangieri, C. Gaudio. GIDRM, Modena (Italy)
- 2015** A selective paper artwork cleaning process using modified Gellan hydrogel. C. Mazzuca, L. Micheli, E. Cervelli, G. Petrella, C. Cristini, S. Iannuccelli, et al. Technart -

Non-destructive and microanalytical technique in art and cultural heritage, Catania
(Italy)

MEMBERSHIP OF SCIENTIFIC SOCIETIES

Jan 2023 - current

Member of the "Italian Chemical Society" (SCI)

Sep 2017 - current

Member of the "Italian Magnetic Resonance Discussion Group" (GIDRM)