

Giuseppina Camiolo

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Summary

Experience in cancer research, with special focus in cellular and molecular applications in hematological malignances development and chemo-resistance (i.e. Multiple Myeloma, Myelodysplastic Syndrome and Neuroblastoma). I have been implied in projects which required histological techniques, qPCR and western blot analysis, fish and rearing systems maintenance, mammalian cell cultures, flow cytometry, genome editing Crispr-Cas9 system technique, cancer cells xenotransplantation in *in vivo* model, neutrophils and macrophages recruitment assay.

My PhD project involved inter-departmental collaboration with other universities, including a period (six months) in the University of Murcia (Spain). For this reason I have developed good inter-personal and communication skills and the ability to work both independently and in a team.

Education

- Postdoc fellow, Centre for Regenerative Medicine, The University of Edinburgh, United Kingdom (February 2020- to date).
- PhD, Department of Biomedical and Biotechnological Sciences, University of Catania, Catania (2016 – 2019). Title: “Novel strategies to overcome bortezomib resistance in Multiple Myeloma”.
- International internship during PhD , University of Murcia, Spain (February- August 2019).
- Professional Habilitation, University of Catania, Italy (2015)
 - M.Sc in “Cellular and Molecular Biology” (110/110), University of Catania, Catania, Italy (2012-2014).
- B.Sc in “Biological Sciences” (107/110), University of Catania, Catania, Italy (2008-2012).

Research experience

- **Guardian classroom** (2015), University of Catania. Master: “Tecniche di analisi biomolecolari applicate alle indagini di laboratorio in ambito forense” (module of immuno-cytochemistry and immuno-histochemistry methodologies).
- Research assistant (2015), University of Catania. Project: FIR 2014.
- One year as **research assistant** (2016), General Hospital “Policlinico Vittorio Emanuele” (University of Catania). Project: “Ruolo dell’Eme Ossigenasi 1 nei meccanismi di farmaco resistenza nelle plasmacellule di pazienti con Mieloma Multiplo” (Role of Heme Oxygenase 1 in drug resistance mechanisms induced in plamacells of Multiple Myeloma patients).
- During my PhD I made a **residence period** in the **Cellular Biology Laboratory, Department of Biology, University of Murcia**, Spain, for six months in 2019 in order to learn and perform cancer cells xenotransplantation in Zebrafish model, genome editing Crispr-Cas 9 technique to create Zebrafish mutants, neutrophils and macrophages recruitment assay in Zebrafish inflammatory response to inflammation stimuli.

Teaching experience

As part of my predoctoral grant, I helped in lectures and practical sessions in several subjects involved in cancer development, mechanisms of chemoristance, as well as biochemistry. I have also been in charge of teaching different laboratory techniques to new students.

I have also been in charge of teaching different laboratory techniques to the ungraduated students and new PhD students at the Departments of Biological, Geological and Environmental Sciences, Department of Biomedical and Biotechnological Sciences and Cellular and Molecular Biology Lab. of General Hospital "Policlinico Vittorio Emanuele", University of Catania.

Publications

Romano A, Parrinello NL, Simeon V, Puglisi F, La Cava P, Bellofiore C, Giallongo C, **Camiolo G**, D'Auria F, Grieco V, Larocca F, Barbato A, Cambria D, La Spina E, Tibullo D, Palumbo GA, Conticello C, Musto P, Di Raimondo F. High-density neutrophils in MGUS and multiple myeloma are dysfunctional and immune-suppressive due to increased STAT3 downstream signaling. *Sci Rep.* 2020 Feb 6;10(1):1983. doi: 10.1038/s41598-020-58859-x. PubMed PMID: 32029833.

Giallongo C, Tibullo D, **Camiolo G**, Parrinello NL, Romano A, Puglisi F, Barbato A, Conticello C, Lupo G, Anfuso CD, Lazzarino G, Li Volti G, Palumbo GA, Di Raimondo F. TLR4 signaling drives mesenchymal stromal cells commitment to promote tumor microenvironment transformation in multiple myeloma. *Cell Death Dis.* 2019 Sep 20;10(10):704. doi: 10.1038/s41419-019-1959-5. PubMed PMID: 31541083; PubMed Central PMCID: PMC6754430

Camiolo G, Tibullo D, Giallongo C, Romano A, Parrinello NL, Musumeci G, Di Rosa M, Vicario N, Brundo MV, Amenta F, Ferrante M, Copat C, Avola R, Li Volti G, Salvaggio A, Di Raimondo F, Palumbo GA. α -Lipoic Acid Reduces Iron-induced Toxicity and Oxidative Stress in a Model of Iron Overload. *Int J Mol Sci.* 2019 Jan 31;20(3) pii: E609. doi: 10.3390/ijms20030609. PubMed PMID: 30708965; PubMed Central PMCID: PMC6387298.

Puglisi F, Parrinello NL, Giallongo C, Cambria D, **Camiolo G**, Bellofiore C, Conticello C, Del Fabro V, Leotta V, Markovic U, Sapienza G, Barbato A, Scalese S, Tibullo D, Brundo MV, Palumbo GA, Di Raimondo F, Romano A. Plasticity of high-density neutrophils in multiple myeloma is associated to increased autophagy via STAT3. Manuscript ID: ijms-533104 (submitted).

Romano A, Parrinello NL, Chiarenza A, Motta G, Tibullo D, Giallongo C, La Cava P, **Camiolo G**, Puglisi F, Palumbo GA, Di Raimondo F. Immune off-target effects of Brentuximab Vedotin in relapsed/refractory Hodgkin Lymphoma. *Br J Haematol.* 2019 May;185(3):468-479. doi: 10.1111/bjh.15801. Epub 2019 Feb 15. PubMed PMID: 30768678

Barbagallo I, Giallongo C, Volti GL, Distefano A, **Camiolo G**, Raffaele M, Salerno L, Pittalà V, Sorrenti V, Avola R, Di Rosa M, Vanella L, Di Raimondo F, Tibullo D. Heme Oxygenase Inhibition Sensitizes Neuroblastoma Cells to Carfilzomib. *Mol Neurobiol.* 2018 Jun 10. doi: 10.1007/s12035-018-1133-6. [Epub ahead of print] PubMed PMID: 29948946.

Romano A, Parrinello NL, La Cava P, Tibullo D, Giallongo C, **Camiolo G**, Puglisi F, Parisi M, Piroso MC, Martino E, Conticello C, Palumbo GA, Di Raimondo F. PMN-MDSC and arginase are increased in myeloma and may contribute to resistance to therapy. *Expert Rev Mol Diagn.* 2018 Jul;18(7):675-683. doi: 10.1080/14737159.2018.1470929. Epub 2018 May 3. PubMed PMID: 2970798

Giallongo C, Parrinello NL, La Cava P, **Camiolo G**, Romano A, Scalia M, Stagno F, Palumbo GA, Avola R, Li Volti G, Tibullo D, Di Raimondo F. Monocytic myeloid-derived suppressor cells as prognostic factor in chronic myeloid leukaemia patients treated with dasatinib. *J Cell Mol Med*. 2018 Feb;22(2):1070-1080. doi: 10.1111/jcmm.13326. Epub 2017 Dec 8. PubMed PMID: 29218828; PubMed Central PMCID: PMC5783858.

Fuochi V, Li Volti G, **Camiolo G**, Tiralongo F, Giallongo C, Distefano A, Petronio G, Barbagallo I, Viola M, Furneri PM, Di Rosa M, Avola R, Tibullo D. Antimicrobial and Anti-Proliferative Effects of Skin Mucus Derived from *Dasyatis pastinaca* (Linnaeus, 1758). *Mar Drugs*. 2017 Nov 1;15(11). pii: E342. doi: 10.3390/md15110342. PubMed PMID: 29104260; PubMed Central PMCID: PMC5706032

Tibullo D, Giallongo C, Puglisi F, Tomassoni D, **Camiolo G**, Cristaldi M, Brundo MV, Anuso CD, Lupo G, Stampone T, Li Volti G, Amenta F, Avola R, Bramanti V. Effect of Lipoic Acid on the Biochemical Mechanisms of Resistance to Bortezomib in SH-SY5Y Neuroblastoma Cells. *Mol Neurobiol*. 2018 Apr;55(4):3344-3350. doi: 10.1007/s12035-017-0575-6. Epub 2017 May 11. PubMed PMID: 28497200.

Salvaggio A, Marino F, Albano M, Pecoraro R, **Camiolo G**, Tibullo D, Bramanti V, Lombardo BM, Saccone S, Mazzei V, Brundo MV. Toxic Effects of Zinc Chloride on the Bone Development in *Danio rerio* (Hamilton, 1822). *Front Physiol*. 2016 Apr 29;7:153. doi: 10.3389/fphys.2016.00153. eCollection 2016. PubMed PMID: 27199768; PubMed Central PMCID: PMC4850361.

Viscuso R, **Camiolo G**, Vitale DG. Light and electron microscopy study of the spermatheca of *Eupholidoptera chabrieri bimucronata* (Ramme, 1927) and *Uromenus brevicollis trinacriae* La Greca 1964 (Orthoptera: Tettigoniidae). *Microsc Res Tech*. 2015 Jul;78(7):577-86. doi: 10.1002/jemt.22511. Epub 2015 Apr 29. PubMed PMID: 25921366.

Congresses

- Viscuso R., **Camiolo G.**, Vitale D., Genesi degli spermatodesmi, loro trasferimento e conservazione in alcuni insetti Ortotteri. Atti 75° **Congresso Nazionale UZI**, September 2014, Bari.
- D'urso V., Vaccalluzzo V., Viscuso R., **Camiolo G.**, Vitale D., Caratteristiche strutturali dell'intestino medio di alcuni Apoidea (Insecta: Hymenoptera) in seguito all'azione tossica di un biopesticida utilizzato in agricoltura. Atti 75° **Congresso Nazionale UZI**, September 2014, Bari.
- **Camiolo G.**, Puglisi F, Pecoraro R, D'amante G, Droutsas A, Salvaggio A, Ferrante M, Brundo Mv, Tibullo D, Tiralongo F. Bioaccumulation of heavy metals in *Parablennius sanguinolentus* and related biomarkers of exposure. In Atti XV **European Congress of Ichthyology**. July/ November 2015.
- Pecoraro R, **Camiolo G.**, Droutsas A, Tibullo D, Buccheri Ma, Impellizzeri G, Brundo Mv, Marino F, Privitera V. Toxic effects caused by a long-term exposure of *Danio rerio* to TiO₂ nanoparticles. In Atti XV **European Congress of Ichthyology**. July/November 2015.
- Messina G, Lombardo BM, Conti E, Clausi M, Guglielmo A, Testa G, Guarnaccia P, Sciandrello S, Rocuzzo G, Abbate C, Brogna F, **Camiolo G.**, Leone D, Mazzei V, Brundo Mv. Biological indicators and biomarkers for soil quality evaluation in natural and cultivated areas of the oriented natural reserve "Faunistic Oasis of Vendicari" (Eastern Sicily). In Atti 76° **Congresso Nazionale UZI** September 2015, Viterbo.
- Pecoraro R., **Camiolo G.**, Marino F., D'angelo D., Scalese S., Brundo M.V. & Privitera V. Valutazione della tossicità di GO e rGO sugli stadi larvali di zebrafish. In Atti **XXI Convegno Nazionale SIPI**, October 2015, Chioggia.
- **Camiolo G.**, Pecoraro R., D'amante G., Mazzei V., Tibullo D., Messina G., Lombardo B.M., SALVAGGIO A. & BRUNDO M.V. Impatto dei neonicotinoidi sugli ecosistemi acquatici: *Melanoides tuberculata* come nuovo modello di studio. In Atti **XXI Convegno Nazionale SIPI**, October 2015, Chioggia.

- **Camio G.**, Pecoraro R., D'amante G., Tibullo D., Mazzei V., Messina G., Lombardo B.M., Brundo M.V. & Salvaggio A. Test di spemiotossicità e indagini citologiche in spermatozoi di *Melanoides tuberculata* in seguito ad esposizione a nano particelle di TiO₂. In Atti XXI **Convegno Nazionale SIPI**, October 2015, Chioggia.

- D'amante G, Brundo MV, Loreto F , Pecoraro R , Fragalà G , Scalisi E, Tibullo D , **Camio G** , Tummino M , Pagliaro G , Lombardo Bm , Messina G , Salvaggio A. Toxicity evaluation of neonicotinoid pesticide, thiacloprid, in Zebrafish. Atti 1° **Convegno Nazionale Congiunto SITE-UZI-SIB**, September 2016, Milano Bicocca

- Giallongo C., Tibullo D., Parrinello N., La Cava P., **Camio G.**, D'amante G., Caporarello N., Conticello C., Anfuso D., Romano A., Di Raimondo F., Mesenchymal stem cells (msc) promotes tumor microenvironment transformation driving granulocyte-like myeloid derived suppressor cells (g-mdsc) activation in smoldering and multiple myeloma patients. Copenhagen, **21st Congress European Hematology Association**, June 2016.

- Giallongo C., Parrinello N., Tibullo D., La Cava P., Romano A., **Camio G.**, D'amante G., Stagno F., Vigneri P., Palumbo G.A., Di Raimondo F., Monocytic myeloid derived suppressor cells (m-mdsc) as prognostic factor in dasatinib treated patients with chronic myeloid leukemia. Copenhagen, **21st congress European Hematology Association**, June 2016.

- Giallongo C., Tibullo D., Parrinello N., La Cava P., **Camio G.**, D'amante G., Caporariello N., Anfuso D, Conticello C., Chiarenza A., Romano A. And Di Raimondo F., Mesenchymal stem cells (MSC) promotes tumor microenvironment transformation driving Granulocyte-like Myeloid Derived Suppressor Cells (G-MDSC) activation in Smoldering and Multiple Myeloma patients. Copenhagen, **21st Congress European Hematology Association**, June 2016

- Tibullo D., Barbagallo I., Giallongo C., **Camio G.**, D'amante G., La Cava P.,Parrinello N., Romano A., Conticello C., Saccone S., Brundo M.V., Vanella L., Li Volti G., Di Raimondo F., Heme oxygenase 1 (ho-1) protects myeloma cells against bortezomib through nucleartranslocation and regulation of er stress and autophagy proteins. Copenhagen, **21st Congress European Hematology Association**, June 2016

- Tibullo D, Barbagallo I, Giallongo C, **Camiolo G**, Romano A, La Cava P, Parrinello Ln, Conticello C, Brundo Mv, Li Volti G, Di Raimondo F. Nuclear localization of Heme-oxygenase 1 contributes to bortezomib resistance in myeloma cells. **MULTIPLE MYELOMA 2016**, June/ July2016. University Magna Graecia- Catanzaro (Italy)

- Giallongo C, Tibullo D, Parrinello Ln, La Cava P, **Camiolo G**, Caporariello N, Anfuso Cd, Conticello C, Chiarenza A, Palumbo Ga, Romano A, Di Raimondo F. Mesenchymal stem cell (MSC) promote immature myeloid cells to become granulocytic myeloid-derived suppressor cells (G- MDSC) with immunosuppressive, pro-angiogenic and bone digestive activity in multiple myeloma patients. **MULTIPLE MYELOMA 2016**, June/July 2016. University Magna Graecia- Catanzaro (Italy)

- **G. Camiolo**, N.L. Parrinello, C. Giallongo, D. Tibullo, V. Simeon, P. La Cava, M. Parisi, M. L. Consoli, C. Conticello, P. Musto, G. Rizzo, V. Calafiore, A. Chiarenza, M.V. Brundo, S. Scalese, A.M.Triolo, G. A. Palumbo, F. Di Raimondo And A. Romano. High-densityneutrophils are aberrantly activated and immunosuppressive in Multiple Myeloma. **Under40 in Hamatology**, November 2016, Villafranca di Verona (VR).

- **Camiolo G**, Tibullo D, Giallongo G, Parrinello NI, La Cava P, Avola R, Palumbo Ga, Di Raimondo F. α -Lipoic Acid reduces oxidative stress induced by iron overload. **Under40 in Hematology**, November 2017, Lazise (VR).

- **Camiolo G**, Tibullo D, Giallongo C, Parrinello NI, La Cava P, Romano A, Puglisi F, Li Volti G, Avola R, Di Raimondo F, Palumbo Ga. Alpha lipoic acid reduces the toxic effects induced by iron overload: in vitro and in vivo models. **23rd Congress of EHA**; Stockholm June 2018.

- **Giuseppina Camiolo**, Cesarina Giallongo, Fabrizio Puglisi, Alessandra Romano, Giuseppe Lazzarino, Giuseppe Musumeci, Concetta Conticello, Giovanni Li Volti, Daniele Tibullo And Francesco Di Raimondo. Role of mitochondrial metabolism in resistance induced by heme oxygenase 1 to bortezomib in myeloma cell. **Under40 in Hematology**, November 2018, Roma.

- **Camiolo G**, Tibullo D, Giallongo C, La Cava P, Parrinello NL, Romano A, Puglisi F, Li Volti G, Avola R, Di Raimondo F, Palumbo GA. Alpha lipoic acid shows antioxidant and

chelating properties against the toxic effects induced by secondary iron overload. **SIES 2018**, Rimini (Italy), October 2018. Oral communication.

- C. Giallongo, D. Tibullo, **G. Camiolo**, N. Parrinello, P. La Cava, A. Romano, F. Puglisi, E. Martino, G. Sapienza, C. Conticello, G.A. Palumbo, F. Di Raimondo. TLR4 SIGNALING PROMOTE MESENCHYMAL STEM CELLS (MSC) COMMITMENT TO PROMOTE TUMOR MICROENVIRONMENT TRANSFORMATION IN MULTIPLE MYELOMA. **SIES 2018**, Rimini (Italy), October 2018. Oral communication.

- A. Romano, P. La Cava, N.L. Parrinello, C. Giallongo, D. Tibullo, **G. Camiolo**, F. Puglisi, M. Parisi, V. Del Fabro, C. Bellofiore, G. Sapienza, F. Cremasco, C. Conticello, G.A. Palumbo, S. Cenci, F. Di Raimondo. TRYPTOPHAN SHORTAGE DUE TO IDO-1 EXPRESSED BY HIGH-DENSITY NEUTROPHILS INDUCE IMMUNE-SUPPRESSION AND AN ADAPTIVE RESPONSE IN PLASMA CELLS OF MULTIPLE MYELOMA. **SIES 2018**, Rimini (Italy), October 2018.

- **Camiolo G**, Rodríguez-Ruiz L, Pardo-Sanchez I, Li Volti G, Avola R, Mulero V and Tibullo D. EVALUATION OF ALPHA-LIPOIC ACID ANTI-INFLAMMATORY PROPERTIES USING ZEBRAFISH AS IN VIVO MODEL. **3rd International Conference on Fish and Shellfish Immunology**, Las Palmas de Gran Canaria (Spain), June 2019.

- **G. Camiolo**, A. Barbato, C. Giallongo, D. Cambria, F. Puglisi, C. Conticello, A. Romano, V. Del Fabro, G.A. Palumbo, G. Li Volti, V. Mulero, D. Tibullo, F. Di Raimondo. IRON INDUCES BORTEZOMIB RESISTANCE IMPROVING MITOCHONDRIAL FITNESS AND ENERGETIC METABOLISM IN MULTIPLE MYELOMA. **SIE 2019**, Rome (Italy), October 7-9, 2019.

- **G. Camiolo**, A. Barbato, C. Giallongo, D. Cambria, F. Puglisi, A. Romano, L. N. Parrinello, G. A. Palumbo, V. Mulero, D. Tibullo and F. Di Raimondo. IRON INDUCES BORTEZOMIB RESISTANCE IN MYELOMA MODEL. **Under40 in Hematology**, Milan (Italy), November 7-8, 2019.

- C. Giallongo, D. Tibullo, **G. Camiolo**, A. Barbato, D. Cambria, F. Puglisi, A. Romano, G.A. Palumbo and F. Di Raimondo. INHIBITION OF TLR4 SIGNALING OVERCOMES BORTEZOMIB RESISTANCE IN MYELOMA. **Under40 in Hematology**, Milan (Italy), November 7-8, 2019.

Languages and other skills

Languages:

English: fluent (B2)

Spanish: fluent (B2)

Italian: native

IT skills:

Excellent knowledge of statistical (SPSS, PRIMER+Permanova, exc..), data handling packages (MS Office, exc..) and bioinformatics software (Primer3, BioEdit, exc..).

European driving licence (B)

