

University Academic Curriculum Vitae

Personal information

Name: MARIA CONCETTA TENUTA

Education since leaving school

- 2011 Degree in Nutritional Science with vote 101/110; University of Calabria - Department of Pharmacy and Health Science and Nutrition
- 2014 Master's degree in Nutritional Science with vote 105/110; University of Calabria - Department of Pharmacy and Health Science and Nutrition
- 2020 PhD in "Translational Medicine" SSD BIO/15 - Pharmaceutical Biology, in cotutorship between the University of Calabria and the Université de Paris, Ecole Doctorale Médicament, Toxicologie, Chimie, Imageries (MTCI ED 563); (18 months spent in Italy - 18 months spent in France). In light of this, I was awarded an Italian PhD in "Pharmaceutical Biology" and French PhD in "Pharmacognosy"
- 2015 Obtained professional qualification as Biologist and nutritionist at University of Calabria - Department of Biology, Ecology and Earth Science- DiBEST

Last appointment

- Researcher with fixed-term contract (RTDa)
- From October 2022 to September 2025
- Free University of Bolzano- Faculty of Agricultural, Environmental and Food Sciences
- I am responsible for evaluation phytochemical profile of natural extracts obtained with conventional and innovative extraction techniques (Soxhlet, maceration, ultrasound and CO₂), moreover I am responsible to evaluate the antioxidant activities of these extracts but also their oxidative stability to prevent the oxidation of oils. I am responsible for the valorisation of rice byproducts, from the extraction of bioactive compounds to regenerate of frying oils through use of rice byproducts (husk).

Professional experience

Chronological list of all previous employments (each with job title, starting and finishing dates, level, employer, responsibilities)

From / to	Job title	Name of academic Institution	Academic level	responsibilities
May 2022/September 2022	Research Fellow	University of Modena and Reggio Emilia- Department of Life Science- Supervisor Prof Patrizia Fava	Research Fellow	I am responsible for evaluation of packaging with more eco-compostable materials to reduce the use of plastics in the fruit chain. Moreover, I am responsible for evaluation microbiological and sensory in order to guarantee the same freshness and healthiness found in packages currently

				present in the market
May 2021/April 2022	Research Fellow	University of Modena and Reggio Emilia-Department of Life Science-Supervisor Prof Fabio Licciardello	Research Fellow	I am responsible for evaluation of edible coating to improve shelf life of sour cherries and the treatment of innovative technologies to obtain a better by-product. Moreover, I am responsible for evaluation of effects of treatment (ozone and high hydrostatic pressure) through chemical, microbiological, sensory analysis. I am responsible to evaluation of the content in bioactive compounds of fresh sour cherries, seeds and processed products by extraction and HPLC-MS analysis
November 2016/ November 2019	PhD student	University of Calabria - Department of Pharmacy and Health Science and Nutrition-Supervisor Prof. Rosa Tundis	PhD student (founded by University of Calabria)	I was responsible for <i>in vitro</i> biological evaluation (antioxidant, hypolipidemic and hypoglycaemic activities) of edible plants extracts or fractions (fruits and leaves). The latter were processed using maceration, ultrasound, Soxhlet apparatus and decoction to obtained dried extracts.
March 2018/August 2019	PhD student	Université de Paris - Laboratoire de Produit Naturel, Analyse et Synthèse UMR 8038 CNRS - Faculté des Sciences Pharmaceutiques et Biologiques de Paris-Supervisor Prof. Brigitte Deguin	PhD student (founded by University of Calabria)	I was responsible for the chemical characterisation, using HPLC-MS, of different extracts obtained from fruits and leaves of Mediterranean plants (<i>Arbutus unedo</i> , <i>Cornus mas</i> , <i>Cornus sanguinea</i> and <i>Vaccinium corymbosum</i>). The extracts were finally

				processed to obtain the fractions rich in polyphenols and iridoids.
November 2014/ May 2015	Pre-doctoral fellow	University of Calabria - Department of Computer Engineering, Modelling, Electronics and Systems- Responsible Prof. Bruno De Cindio	University bursary in the project PON01_00293 project - Spread Bio Oil - "Development of new technological processes for the production of emulsions based innovative olive oil organic consistency a controlled" - National Operational Programme research and competitiveness for the regions of convergence	I obtained a post graduate scholarship to work on a project aimed at studying the oxidative stability of vegetable oils.
March 2013/June 2013	Erasmus student	University of Aberdeen - Rowett Institute of Nutrition and Health- Scotland- Supervisor Prof. Garry Duthie	Erasmus student	I was awarded an Erasmus placement scholarship to work on project aimed at characterising the oxidative stability of vegetable oils (olive oil and rapeseed oil), this study represented half of my experimental Master's thesis entitled: "Oxidative stability and biological properties of vegetable oils: rapeseed oil"

Experience in academic teaching

2024/2025

- 1° Semester Laboratory of Evaluation of Food quality and authenticity (CHIM/10 Credits 6) in the International Master in Food Sciences for Innovation and Authenticity at Free University of Bolzano
- 2° Semester Laboratory of Agro-Industries (AGR/15 Credits 5) in the Bachelor in Agricultural, Food and Mountain Environmental Sciences at Free University of Bolzano

2023/2024

- 1° Semester Laboratory of Evaluation of Food quality and authenticity (CHIM/10 Credits 6) in the International Master in Food Sciences for Innovation and Authenticity at Free University of Bolzano
- 2° Semester Laboratory of Agro-Industries (AGR/15 Credits 5)

in the Bachelor in Agricultural, Food and Mountain Environmental Sciences at Free University of Bolzano

2022/2023

- 1° Semester Laboratory of Food Chemistry (CHIM/10 Credits 6) in the International Master in Food Sciences for Innovation and Authenticity at Free University of Bolzano
- 2°Semester Laboratory of Reaction kinetics in food processing (AGR/15 Credits 6) in the International Master in Food Sciences for Innovation and Authenticity at Free University of Bolzano

2017/2018

- Temporary contract (December 2017/February 2018) of continuous collaboration as a tutor to support the degree course in SCIENTIFIC INFORMATION ON DRUGS AND HEALTH PRODUCTS to University of Calabria - Department of Pharmacy and Health Science and Nutrition - Responsible Prof. Monica Rosa Loizzo. The course I was responsible for, belonging to the SSD AGR/15 was as follow: Innovative food technology.
- Co-supervisor in two different Master thesis in SSD AGR/15 (Food Science and Technology) to University of Modena and Reggio Emilia- Department of Life Science. The thesis titles are:
 - Technological interventions to extend shelf-life and enhancing of the “Amarena Brusca di Modena”
 - Packaging solutions aiming to extend cherries and fresh cut grapes post-harvest shelf life

Other activities

- Co-supervisor in two different Master thesis in SSD AGR/15 (Food Science and Technology) to University of Modena and Reggio Emilia- Department of Life Science. The thesis titles are:
 - Technological interventions to extend shelf-life and enhancing of the “Amarena Brusca di Modena”
 - Packaging solutions aiming to extend cherries and fresh cut grapes post-harvest shelf life
- Co-supervisor in Master thesis in SSD 07/AGRI-07 (Food Science and Technology) to Free University of Bolzano. The thesis title is:
 - Application of extraction technologies for the valorization of rice bran.

Research projects

Principal investigator in the:

PRIN 2022 PNRR project **“Rice by-products valorization: from the recovery of bioactive compounds to the regeneration of used frying oils” (RAINDROP)** in collaboration with the University of Verona.

Team members in the:

INTERREG Project **“Cross-border cooperation for the valorisation of alpine plants as sources of bioactive compounds” (NETTLE)** in collaboration with University of Udine and University of Salzburg.

Publications

- 1) Kellil A, Suhag R, **Tenuta MC**, Milosavljevic D, Ferrentino G. PGSS encapsulation of curcumin-rich turmeric extract: Improving photostability and its application in functional mayonnaise. *Future Foods*, **2026**, 13, 100901. <https://doi.org/10.1016/j.fufo.2026.100901>
- 2) Rajat Suhag R, Razem M, Bolchini S, **Tenuta MC**, Ferrentino G. Mapping antioxidant mechanisms in plant extracts via reactivity kinetics inhibiting oil autoxidation. *Applied Food Research*, **2025**, 5, 101476. <https://doi.org/10.1016/j.afres.2025.101476>.
- 3) **Tenuta MC**, Deguin B, Loizzo MR, Fedora Grande F, Brindisi M, Occhiuzzi MA, Dugay A, Bonesi M, Malfa GA, Tundis R. Exploring by-products as sources of bioactive compounds: LC-ESI-QTOF-MS profiling and bioactivity assessment of blood twig dogwood and cornelian cherry leaf extracts and fractions. *Journal of Functional Foods*, **2025**, 133, 107002. <https://doi.org/10.1016/j.jff.2025.107002>
- 4) Razem M, Wahab A, **Tenuta MC**, Ferrentino G, Morozova K, Scampicchio M. Evaluation of Kamut® wheat bran extract as a natural antioxidant for improving sunflower oil oxidative stability at frying temperatures. *Food Chemistry*, **2025**, 487, 144857. <https://doi.org/10.1016/j.foodchem.2025.144857>
- 5) Le Tan H, Ferrentino G, Morozova K, **Tenuta MC**, Scampicchio M. Supercritical CO₂ extraction and fractionation of turmeric polyphenols: antioxidant capacity and inhibition of lipid oxidation in sunflower oil. *Food Bioscience*. **2025**, 69, 106906. <https://doi.org/10.1016/j.fbio.2025.106906>
- 6) Mabusela MM, Matsiliza-Mlathi B, Aprea E, Kleynhans R, **Tenuta MC***, Kellil A, Gatto P, Morozova K, Scampicchio MM, Ferrentino G. Influence of phenological growth stages on the bioactivity and chemical profile of *Buddleja Saligna* Willd. extracts. *Italian Journal of Food Science*, **2025**, 37, 340-353. <https://doi.org/10.15586/ijfs.v37i3.2994>
- 7) Wahab A, Suhag R, Kellil A, **Tenuta MC**, Scampicchio M, Ferrentino G. Oxidation kinetics of speck fat: Insights into its oxidizability and antioxidant efficiency of *Salvia officinalis* L. and *Origanum vulgare* L. ethanolic extracts. *Meat Science*. **2025**, 226, 109846. [doi:10.1016/j.meatsci.2025.109846](https://doi.org/10.1016/j.meatsci.2025.109846)
- 8) Kellil A, Suhag R, **Tenuta MC**, Bolchini S, Merkyte V, Scampicchio M, Morozova K, Ferrentino G. Sequential extraction of antioxidants from *Citrus aurantium* L. flower and kinetic evaluation of their effect on oil microparticle oxidative stability. *Food Chemistry: X*, **2025**, 27, 102448. doi.org/10.1016/j.fochx.2025.102448.
- 9) Angeli L, Morozova K, **Tenuta MC***, Bolchini S, Scampicchio M, Ferrentino G. A novel AAPH-HPLC-HRMS approach for the identification of reactive compounds in *Salvia officinalis* L. extract. *Applied Food Research*, **2025**, 5, 101249. [doi:10.1016/j.afres.2025.101249](https://doi.org/10.1016/j.afres.2025.101249)
- 10) **Tenuta MC**, Loizzo MR, Tundis R, Dugay A, Bouzidi C, Marie A, Acquaviva R, Cappello AR, Deguin B. Iridoid- and flavonoid-enriched fractions of *Cornus sanguinea* and *Cornus mas* exert antioxidant and anti-inflammatory effects and inhibit key enzymes in the treatment of metabolic disorders. *Food & Function*, **2023**, 14, 8838-8853. [doi: 10.1039/d3fo02987e](https://doi.org/10.1039/d3fo02987e)

- 11) **Tenuta MC**, Artoni E, Fava P, Bignami C, Licciardello F. Shelf life extension and nutritional quality preservation of sour cherries through high pressure processing. *Foods* **2023**, 12, 342. <https://doi.org/10.3390/foods12020342>.
- 12) **Tenuta MC**, Deguin B, Loizzo MR, Cuyamendous C, Bonesi M, Sicari V, Trabalzini L, Mitaine-Offer AC, Xiao J, Tundis R. An overview of traditional uses, phytochemical compositions and biological activities of edible fruits of European and Asian *Cornus* species. *Foods*, **2022**, 11, 1240. doi:10.3390/foods11091240.
- 13) Tundis R, **Tenuta MC**, Loizzo MR, Bonesi M, Finetti F, Trabalzini L, Deguin B. *Vaccinium* Species (Ericaceae): From Chemical Composition to Bio-Functional Activities. *Applied Science*, **2021**, 11, 5655. doi:10.3390/app11125655.
- 14) Bonesi, M, Saab AM, **Tenuta MC**, Leporini M, Saab MJ, Loizzo MR, Tundis R. Screening of traditional Lebanese medicinal plants as antioxidants and inhibitors of key enzymes linked to type 2 diabetes. *Plant Biosystem*, **2020**, 154, 656-662, doi: 10.1080/11263504.2019.1674400.
- 15) **Tenuta MC**, Malfa GA, Bonesi M, Acquaviva R, Loizzo MR, Dugay A, Bouzidi C, Barbara Tomasello, Tundis R, Deguin B. LC-ESI-QTOF-MS profiling, protective effects on oxidative damage, and inhibitory activity of enzymes linked to type 2 diabetes and nitric oxide production of *Vaccinium corymbosum* L. (Ericaceae) extracts. *Journal of Berry Research*, **2020**, 10, 603-622, doi: 10.3233/JBR-200536.
- 16) **Tenuta MC**, Deguin B, Loizzo MR, Dugay A, Acquaviva R, Malfa GA, Bonesi M, Bouzidi C, Tundis R. Contribution of flavonoids and iridoids to the hypoglycaemic, antioxidant, and nitric oxide (NO) inhibitory activities of *Arbutus unedo* L. *Antioxidants*, **2020**, 9, 184, doi: 10.3390/antiox9020184.
- 17) Bonesi M, Leporini M, **Tenuta MC**, Tundis R. The role of anthocyanins in drug discovery: recent developments. *Current Drug Discovery Technologies*, **2020**, 17, 286-298, doi: 10.2174/1570163816666190125152931.
- 18) Maggio A, Loizzo, MR, Riccobono L, Bruno M, **Tenuta, MC**, Leporini M, Falco T, Leto C, Tuttolomondo T, Cammalleri I, La Bella S, Tundis, R. Comparative chemical composition and bioactivity of leaves essential oils from nine Sicilian accessions of *Myrtus communis* L. *Journal of Essential Oil Research*, **2019**, 31, 546-555, doi: 10.1080/10412905.2019.1610089.
- 19) Bonesi M, **Tenuta MC**, Loizzo MR, Sicari V, Tundis R. Potential application of *Prunus armeniaca* L. and *P. domestica* L. leaf essential oils as antioxidant and of cholinesterases inhibitors. *Antioxidants*, **2019**, 8, 2, doi: 10.3390/antiox8010002.
- 20) **Tenuta MC**, Tundis R, Xiao J, Loizzo MR, Dugay A, Deguin B. *Arbutus* species (Ericaceae) as source of valuable bioactive products. *Critical Review in Food Science and Nutrition*, **2018**, 59, 864-881, doi: 10.1080/10408398.2018.1551777.
- 21) Leporini M, Loizzo MR, **Tenuta MC**, Sicari V, Pellicanò TM, Tundis R. Calabrian extra-virgin olive oil from Frantoio cultivar: chemical composition and health properties. *Emirate Journal of Food and Agriculture*, **2018**, 30, 631-637. doi: 10.9755/ejfa.2018.v30.i7.1743.

- 22) Bonesi M, Loizzo MR, Leporini M, **Tenuta MC**, Passalacqua NG, Tundis R. Comparative evaluation of petitgrain oils from six Citrus species alone and in combination as potential functional anti-radicals and antioxidant agents. *Plant Biosystems*, **2017**, 152, 986-993, doi: 10.1080/11263504.2017.1403396.
- 23) Tundis R, **Tenuta MC**, Loizzo MR, Bonesi M, Menichini F, Duthie G. Natural compounds and vegetable powders improve the stability and antioxidant properties of Brassica napus L. var. oleifera (rapeseed) oil. *European Journal of Lipid Science and Technology*, **2017**, 119, 1600228, doi: 10.1002/ejlt.201600228.
- 24) Loizzo MR, Bonesi M, Menichini F, **Tenuta MC**, Leporini M, Tundis R. Antioxidant and carbohydrate-hydrolysing enzymes potential of *Sechium edule* (Jacq.) Swartz (Cucurbitaceae) peel, leaves and pulp fresh and processed. *Plant Foods for Human Nutrition*, **2016**, 71, 381-387, doi: 10.1007/s11130-016-0571-4.
- 25) Loizzo MR, Pugliese, A, Bonesi, M, **Tenuta MC**, Menichini, F, Xiao, J, Tundis, R. Edible flowers: a rich source of phytochemicals with antioxidant and hypoglycaemic activity. *Journal of Agricultural and Food Chemistry*, **2016**, 64, 2467-2474, doi: 10.1021/acs.jafc.5b03092.
- 26) Loizzo MR, Sicari V, **Tenuta MC**, Leporini M, Falco T, Pellicanò TM, Menichini F, Tundis R. Phytochemicals content, antioxidant and hypoglycaemic activities of commercial nutmeg mace (*Myristica fragrans* L.) and pimento (*Pimenta dioica* (L.) Merr.). *International Journal of Food Science and Technology*, **2016**, 51, 2057-2063, doi:10.1111/ijfs.13178.
- 27) Tundis R, Bonesi M, Sicari V, Pellicanò TM, **Tenuta MC**, Leporini M, Menichini F, Loizzo MR. *Poncirus trifoliata* (L.) Raf.: chemical composition, antioxidant properties and hypoglycaemic activity via the inhibition of α -amylase and α -glucosidase enzymes. *Journal of Functional Foods*, **2016**, 25, 477-485, doi: 10.1016/j.jff.2016.06.034.
- 28) Tundis R, Marrelli M, Conforti F, **Tenuta MC**, Bonesi M, Menichini F, Loizzo MR. *Trifolium pratense* and *T. repens* (Leguminosae): edible flower extracts as functional ingredients. *Foods*, **2015**, 4, 338-348, doi: 10.3390/foods4030338.

Book Chapter

- 1) **Tenuta MC**, Leporini M. Human health implications of specific group of food additives. Chapter 2. In: *Food Additives and Human Health*, by S.M. Nabavi, M.R. Loizzo, R. Tundis, S.F. Nabavi, K. Pandima Devi, A. Sanchez Silva, Bentham Science Publishers, **2020**, ISBN: 9789811446115.
- 2) Loizzo MR, Aiello F, **Tenuta MC**, Leporini M, Falco T, Tundis R. Pomegranate (*Punica granatum* L.). Chapter 3.46. In: *Nonvitamin and nonmineral nutritional supplements 1st Edition*, by S.M. Nabavi & A. Sanchez Silva, Elsevier, **2018**, ISBN: 9780128124918.

Further data

- 1) **Tenuta MC**, Basile P, Haghighat Khajavi S, Tolve R, Sportiello L, Favati F, Ferrentino G. Tecnologie estrattive a confronto per la valorizzazione sostenibile della pula del riso. Convegno SISTAL 2025. June 9-10, 2025, Bologna. (Presented by myself, Oral presentation).

- 2) Ferrentino G, **Tenuta MC**, Manzocco L. Ingredienti naturali ad alta quota: estratti naturali da piante alpine tra tradizione e innovazione. Convegno SISTAL 2025. June 9-10, 2025, Bologna. (Poster)
- 3) Angeli L, **Tenuta MC**, Morozova K, Scampicchio M, Ferrentino G. Radical neutralization reaction using pre-column reactor and high-resolution mass spectrometry. 8th MS FOOD DAY. October 16-18, 2024, Torre Canne (BR). (Presented by myself, Oral presentation).
- 4) **Tenuta MC**, Gasparini A, Tolve R, Sportiello L, Morozova K, Scampicchio M, Favati F, Ferrentino G. Valorisation of rice bran by-products through the application of green technologies. Convegno SISTAL 2024. June 12-13, 2024, Bari. (Presented by myself, Oral presentation).
- 5) Tundis R, Passalacqua NG, **Tenuta MC**, Bonesi M, Sicoli G, Trabalzini L, Finetti F, Deguin B, Loizzo MR. *In vitro* hypolipidemic and hypoglycaemic properties of mushroom extracts. The 2nd International Electronic Conference on Foods - Future Foods and Food Technologies for a Sustainable World. October 15-30, **2021**, online.
- 6) Tundis R, **Tenuta MC**, Loizzo MR, Bonesi M, Dugay A, Deguin B. Decoctions of *Cornus mas* L. (cornelian cherry) dried fruits and leaves: development of new nutraceuticals and food supplements. 4th International Symposium on Phytochemicals in Medicine and Food, November 30-December 05, **2020**, Xi'an, China (Presented by myself, Poster).
- 7) Ragusa S, Bonesi M, Loizzo MR, Acquaviva R, **Tenuta MC**, Leporini M, Passalacqua NG, Tundis R. *Juniperus macrocarpa* Sm. and *J. oxycedrus* L. (Cupressaceae) essential oils and extracts as inhibitors of carbohydrates-hydrolysing enzymes. VI International Plant Science Conference, September 4-7, **2019**, Botanical Garden, Padova.
- 8) **Tenuta MC**, Bonesi M, Leporini M, Loizzo MR, Dugay A, Tundis R, Deguin B. *Arbutus unedo* L. decoction exerts *in vitro* antioxidant activity. 26th Young Research Fellows Meeting, February 20-22, **2019**, Université Paris Descartes, Paris, France (Presented by myself, Flash poster).
- 9) Leporini M, Loizzo MR, Sicari V, **Tenuta MC**, Ortiz S, Dugay A, Tundis R, Deguin B. *Citrus × clementina* (Rutaceae) leaves a source of bioactive compounds. 26th Young Research Fellows Meeting, February 20-22, **2019**, Université Paris Descartes, Paris, France (Presented by myself, Poster).

Statement of interest

During my PhD, both in Italy and France, I had the opportunity to work on the phytochemical characterisation and evaluation of the biological activity of natural products from different plant species typical of the Mediterranean regions. In consideration of my skills and expertise, I can contribute to investigating the effect of food processing on the chemical composition of the end-products, in order to put in place strategies to improve food quality by modulating their composition. Furthermore, I will be able to, not only assess the phytochemical properties of foods, but also evaluate the biological activity of specific phytochemical extracts and bioactive compounds using *in vitro* models. In support of this, I have extensive expertise in analytical chemistry, including: Thin Layer Chromatography (TLC), Gas Chromatography (GC), Gas Chromatography-Mass Spectrometry (GC-MS), High Performance Liquid

Chromatography (HPLC), also spectrophotometric evaluation of total phytochemical contents (total polyphenols, total flavonoids, total iridoids, total carotenoids and total anthocyanins). In terms of by expertise in investigating the biological activities of food extracts and bioactive compounds, my skills include: determination of *in vitro* antioxidant activity (DPPH, ABTS, FRAP and beta-carotene bleaching test); inhibition of alpha-amylase and alpha-glucosidase enzymes, inhibition of pancreatic lipase; cholinesterase activity (inhibition of acetylcholinesterase and butyrylcholinesterase); tyrosinase inhibition. During my research grant I had the opportunity to work on the edible coating on fresh fruits (sour cherries) to improve shelf life, to evaluate different treatments (ozone and high hydrostatic pressure) on fresh fruits to obtain by-product with high hygienic-sanitary safety and high nutritional quality. In the last years, during my research period I had the opportunity to work on the valorisation of byproducts and improve the use of green extraction technologies. Moreover, I had improve the analytical characterization skills of plant extracts and antioxidant activity and study of their protective mechanism of lipid and food substrates.

**Language
competence**

Italian: Native Language
English: Level A2
French: Level B1