



Ilaria Carafa, PhD

EXECUTIVE SUMMARY

10 years of work experience in
Food Microbiology & Nutrition

Biotechnologist
at the intersection between Science,
Innovation & Industry.

Extensive international network.
Fluent in English, Spanish & Italian.

EDUCATION & CERTIFICATIONS

B.Sc. in Biotechnology
Department of Agriculture and Vet Medicine
University of Teramo, Italy, 2005-2008

M.Sc. in Agriculture, Food and Agro-Environmental Biotechnology
Department of Agriculture
University of Milan, Italy, 2008-2010

M.Sc. in Biotechnological Industry (major: Medical
Biotechnology), Dept. of Health and Life Sciences
Pompeu Fabra University, Barcelona, Spain, 2010-2011

European PhD in Biomolecular Sciences
Doctoral School of Sciences
Università Politecnica delle Marche & Fondazione Edmund Mach
Ancona/San Michele all'Adige, Italy, 2012-2016

Executive Training, Technology Entrepreneurship: Lab to Market
Harvard University, 2020

AWARDS AND GRANTS

UNIBZ RTD 2020 Grant
Competitive grant for post-doc researchers
Bozen, June 2020

Fondazione Caritro Grant
Competitive public grant for post-doc researchers
Trento, September 2016

**FIRST (FEM International Research School of Trentino) PhD
Fellowship**
Competitive public grant for PhD fellow
San Michele all'Adige, September 2011

Ritorno al Futuro Award
Competitive public award by Italian Ministry of Education,
Apulia Region, and the European Social Fund
Bari, September 2010

WORK EXPERIENCE

RTD-A & LECTURER

FREE UNIVERSITY OF BOZEN
Dept of Food Science & Tech
Micro4Food Lab

Bozen, Italy
Oct 2019 - current

- Innovations in the Italian Dairy Industry for the enhancement of farm sustainability, milk technological traits and cheese quality. Innoltadairy project (Ager)
- Unravelling the microbiome meta-community: the novel approach for steering cheese making. Micrometacheese project
- Development of a probiotic beverage (industrial project)
- Writing of national and European projects
- Teaching courses 'Cocoa and Coffee fermentation' and 'The natural microbial starters for innovation and authenticity', Master School in Food Innovation and Authenticity, Faculty of Food Science, Free University of Bozen (A.Y. 2019-2020, 2020-2021, 2021-2022)

POST-DOC RESEARCHER

FONDAZIONE EDMUND MACH

Food Quality and Nutrition
Dept

S. Michele a/Adige, Italy
Dec2016 – Sep2019

- Effect of diet on the microbiota and conjugated linoleic acid content in ruminal fluid, cows' milk and cheese. Project TrentinCLA
- Selection of phage-resistant bacteria and design of new functional cheese Project PEI TRENTINGRANA- Partenariato Europeo per l'Innovazione
- Exploitation of a GABA-producing strain for the production of a multifunctional cheese
- Scientific and organizing committee member of the 6° Congresso lattiero-caseario AiTEL. Trento, September 2018
- Visiting at CIBIO (Trento) for skills acquisition on the cultivation of organoids and tumoroids

POST-DOC TECHNOLOGIST

TEAGASC

Irish National Food Authority
Food Science Department

Fermoy, Ireland
Jan 2015 - Dec 2016

- Cohort study on infants nourished with a new milk infant formula (project COMBINE -The COrk Nutrition and MicroBiome Maternal-Infant Cohort Study)
- Therapeutic potential of γ -aminobutyric acid producing *Lactobacillus brevis* on obese mice suffering type 2 diabetes

PHD FELLOW

FONDAZIONE EDMUND MACH

Food Quality and Nutrition
Department

S. Michele a/Adige, Italy
Nov2011 - Nov2015

- Polyphasic characterization, technological and bioactive potential of lactic acid bacteria from Malga cheese. Project FERMALGA
- Development of different microbiological pulls as starters for the production of Malga cheese
- Publication of the scientific manuscript 'In vitro and in vivo activities of lactic acid bacteria from Italian mountain cheese and their exploitation in dairy production'

RESEARCH ASSISTANT LABORATORIOS ORDESA

Barcelona, Spain
Jan - Jun 2011

- Research assistant, Laboratorios Ordesa (leading company in infant nutrition in Spain)
- Production of Bacteriocin Like Inhibitory Substances (BLIS) by human milk resident bacteria.

COMPUTATIONAL SKILLS

- Microsoft Office
- BioNumerics and GelComparII
- BioFlex
- Qiime 1.9
- Qiime 2.0
- STATISTICA v9.0
- GraphPad
- Chromas Lite
- BLAST Tool NCBI

PUBLICATIONS

Peer-reviewed publications

- Pontonio, E., Arora, K., Dingeo, C., **Carafa, I.**, Celano, G., Scarpino, V., ... & Di Cagno, R. (2021). Commercial Organic Versus Conventional Whole Rye and Wheat Flours for Making Sourdough Bread: Safety, Nutritional, and Sensory Implications. *Frontiers in Microbiology*, 12.
- Mancini, A., Rodriguez, M. C., Zago, M., Cologna, N., Goss, A., **Carafa, I.**, ... & Franciosi, E. (2021). Massive Survey on Bacterial-Bacteriophages Biodiversity and Quality of Natural Whey Starter Cultures in Trentingrana Cheese Production. *Frontiers in Microbiology*, 12.
- Álvarez-Fernández, M.A.; **Carafa, I.**; Vrhovsek, U.; Arapitsas, P. (2020). Modulating Wine Aromatic Amino Acid Catabolites by Using *Torulaspora delbrueckii* in Sequentially Inoculated Fermentations or *Saccharomyces cerevisiae* Alone. *Microorganisms*, 8, 1349.
- **Carafa, I.**, Navarro, I., Bittante, G., Tagliapietra, F., Gallo, L., Tuohy, K., & Franciosi, E. (2020). Shift in the cow milk microbiota during alpine pasture as analyzed by culture dependent and high-throughput sequencing techniques. *Food Microbiology*, 91, 103504. doi:10.1016/j.fm.2020.103504.
- Nikoloudaki, O., **Carafa, I.**, & Gobbetti, M. (2020). Microorganisms in Smear Cheeses. Reference Module In *Food Science*. doi:10.1016/b978-0-08-100596-5.23003-5.
- Multari, S., **Carafa, I.**, Barp, L., Caruso, M., Licciardello, C., & Larcher, R. et al. (2020). Effects of *Lactobacillus spp.* on the phytochemical composition of juices from two varieties of *Citrus sinensis* L. Osbeck: 'Tarocco' and 'Washington navel'. *LWT*, 109205. doi:10.1016/j.lwt.2020.109205.
- **Carafa, I.**, Stocco, G., Nardin, T., Larcher, R., Bittante, G., Tuohy, K. M., & Franciosi, E. (2019). Production of naturally γ -aminobutyric acid-enriched cheese using the dairy strains *Streptococcus thermophilus* 84C and *Lactobacillus brevis* DSM 32386. *Frontiers in Microbiology*, 10, 93.
- **Carafa, I.**, Stocco, G., Franceschi, P., Summer, A., Tuohy, K. M., Bittante, G., & Franciosi, E. (2019). Evaluation of autochthonous lactic acid bacteria as starter and non-starter cultures for the production of Traditional Mountain Cheese. *Food Research International*, 115, 209-218.
- Mancini, A., **Carafa, I.**, Franciosi, E., Nardin, T., Bottari, B., Larcher, R., & Tuohy, K. (2019). *In vitro* probiotic characterization of high GABA producing strain *Lactobacillus brevis* DSM 32386 isolated from traditional "wild" Alpine cheese. *Annals Of Microbiology*, 69, 1435-1443. doi:10.1007/s13213-019-01527-x.
- Ryan, P. M., Patterson, E., **Carafa, I.**, Mandal, R., Wishart, D. S., Dinan, T. G., ... & Ross, R. P. (2019). Metformin and DPP-4 Inhibitor Differentially Modulate the intestinal Microbiota and Plasma Metabolome of Metabolically Dysfunctional mice. *Canadian Journal of Diabetes*. <https://doi.org/10.1016/j.jcjd.2019.05.008>

- Patterson, E., Ryan, P., Wiley, N., Carafa, I., Sherwin, E., Moloney, G., Franciosi, E., Mandal, R., Wishart, D., Tuohy, K., Ross, P., Cryan, J., Dinan, T., & Stanton, C. (2019). Gamma-aminobutyric acid-producing lactobacilli positively affect metabolism and depressive-like behaviour in a mouse model of metabolic syndrome. *Scientific Reports*, 9, 16323. doi10.1038/s41598-019-51781x.
- Saha, S., Amalfitano, N., Sturaro, E., Schiavon, S., Tagliapietra, F., Bittante, G., **Carafa, I.**, Franciosi, E. & Gallo, L. (2019). Effects of Summer Transhumance of Dairy Cows to Alpine Pastures on Body Condition, Milk Yield and Composition, and Cheese Making Efficiency. *Animals*, 9(4), 192.
- De Santiago, E., Gill, C. I., **Carafa, I.**, Tuohy, K., De Peña, M. P., & Cid, C. (2019). Digestion and colonic fermentation of raw and cooked *Opuntia ficus-indica* cladodes impacts bioaccessibility and bioactivity. *Journal of Agricultural and Food Chemistry*, 67(9), 2490-2499.
- Guzzon, R., Franciosi, E., Moser, S., **Carafa, I.**, & Larcher, R. (2018). Application of ozone during grape drying for the production of straw wine: effects on the microbiota and compositive profile of grapes. *Journal of applied microbiology*, 125(2):513-527. doi: 10.1111/jam.13774.
- Watkins, C., Murphy, K., Yen, S., **Carafa, I.**, Dempsey, E. M., O'Shea, C. A., & Ryan, C. A. (2017). Effects of therapeutic hypothermia on the gut microbiota and metabolome of infants suffering hypoxic-ischemic encephalopathy at birth. *The international journal of biochemistry & cell biology*, 93, 110-118.
- Guzzon, R., **Carafa, I.**, Tuohy, K., Cervantes, G., Verneti, L., Barmaz, A., Larcher, R., Franciosi, E. (2017). Exploring the microbiota of the red-brown defect in smear-ripened cheese by 454-pyrosequencing and its prevention using different cleaning systems. *Food Microbiology*, 62, 160-168.
- **Carafa, I.**, Clementi, F., Tuohy, K., & Franciosi, E. (2016). Microbial evolution of traditional mountain cheese and characterization of early fermentation cocci for selection of autochthonous dairy starter strains. *Food Microbiology*, 53, 94-103.
- **Carafa, I.**, Nardin, T., Larcher, R., Viola, R., Tuohy, K., Franciosi, E. (2015). Identification and characterization of wild lactobacilli and pediococci from spontaneously fermented Mountain Cheese. *Food Microbiology*, 48, 123-32.
- Franciosi, E., **Carafa, I.**, Nardin, T., Schiavon, S., Poznanski, E., Cavazza, A., Larcher, R., Tuohy, K. (2015). Biodiversity and GABA production among wild lactic acid bacteria isolated from alpine raw cow's milk cheeses. *BioMed Research International*, 2015, 11, ID 625740.

Conference papers

- Ryan, P. M., Patterson, E., **Carafa, I.**, Mandal, R., Wishart, D. S., Dinan, T. G., John F. Cryan, Kieran M. Tuohy, R. Paul Ross & Stanton, C. (2018). Canadian Journal of Diabetes, 42(5), S40. DOI: <https://doi.org/10.1016/j.cjcd.2018.08.120>
- **Carafa, I.**, Gubert, F., Schiavon, S., Tuohy, K., Pecile, A., Franciosi, E. (2012). Quaderno SOZOOALP n° 7, 213-223.

Scientific manuscripts

- **Carafa, I.** (2016). In vitro and in vivo activities of lactic acid bacteria from Italian mountain cheese and their exploitation in dairy production. PhD thesis. <http://hdl.handle.net/10449/32198>.

Publications on Technical- Scientific Journals

- Franciosi, E., **Carafa, I.** (2018). La ricerca riscopre il valore della tradizione: TrentinCLA. *Terra Trentina*, 4:20.
- Franciosi, E., **Carafa, I.** (2017). La ricerca riscopre il valore della tradizione: TrentinCLA: un progetto per rivalutare gli effetti benefici dei prodotti caseari tradizionali trentini. *Informatore Zootecnico*, 18.
- Guzzon, R., Franciosi, E., Carafa, I., Larcher, R., Tuohy, K. (2015). L'ozono, un innovativo strumento per il controllo microbiologico in aziende lattiero-casearie tradizionali. *Industrie alimentari*, 53 (554): 11-15.
- Franciosi, E., Schiavon, S., Carafa, I., Gubert, F., Tuohy, K., Pecile, A. (2012). FERMALGA: la biodiversità microbica come valore aggiunto alla tipicità dei formaggi di malga. *L'allevatore trentino*, 33 (3): 12-18.