Supervisor Project Idea

Supervisor

Insert a brief CV and/or external link, the total number of publications, the ORCID link, 5 of the most significant/recent publications, and a list of funded projects and awards. Please indicate if you are a MSCA fellow yourself and if you have already been a MSCA Supervisor before. max 300 words

ACADEMIC POSITIONS

- 2021 - Full Professor of Nutrition, Faculty of Medicine, UnivPM, Ancona, Italy
- 2019 - Guest Professor, International Research Center for Food Nutrition and Safety, Jiangsu University, Zhenjiang, China
- 2018 – 2020 Distinguished and Honorary Professor, University of Vigo, Vigo, Spain
- 2014 - Scientific Director Research Group on Foods, Nutritional Biochemistry and Health, Universidad Europea del Atlantico, Santander, Spain.
- 2011 – 2021 Associate Professor in Biochemistry, Faculty of Medicine, UnivPM, Ancona, Italy
- 2010 - Scientific Director Research Group on Foods, Nutritional Biochemistry and Health, Universidad International Iberoamericana, Campeche, Mexico.

BIBLIOMETRIC INDICATORS

- Total publications: 484 (Scopus) –518 (WoS)
- Total citations: 33,343 (Scopus) 29,554 (WoS) 57,647 (Google Scholar)
- Average citation per publication: 68.9 (Scopus) 57.0 (WoS)
- h-index: 84 (Scopus) 77 (WoS) 102 (Google Scholar).
- https://orcid.org/0000-0002-7250-1782

PRIZES AND AWARDS

- 2020 Medalla de Oro–Universidad Europea del Atlantico–Santander - Spain
- 2018 Distinguished Researcher – University of Vigo – Vigo – Spain
- 2015-2025 Highly Cited Researcher–Clarivate Analytics–WoS
- 2008 Doctorate Honoris Causa – Carol Davila University of Medicine and Pharmacy – Bucharest -Romania

PUBLICATIONS:

- Cianciosi et al., 2022. Food Chem. 374:131753.
- Atanasov et al., 2021. Nat Rev Drug Discov. 20:200.
- Cianciosi et al., 2020. Food Chem. 325:126881.
- Mazzoni et al., 2019. Food Funct. 10(11):7103–7120.
- Alvarez-Suarez et al., 2014. J Nutr Biochem. 25(3):289-294.

PROJECTS:

- 2024-2025: Protein products based on fermented legumes: from food technology to human health, European Commission NextGenerationEU.
- 2023-2026: PRIMA project: Microbial resources for a sustainable olive oil system and a healthier Mediterranean food: from by-products to functional food.
- 2023-2025: PRIN project: Anthocyanin rich adjuvants against dysbiosis and chronic inflammation in metabolic syndrome patients.
- 2018-2020: UnivPM Strategic Project: Effect of berry consumption on ovarian cancer prevention: the epigenetic role of dietary polyphenols
- 2013-2015 Cooperazione Scientifica e Tecnologica, Ministero Affari esteri, Executive Programme Italy/Serbia Republic, cod. n. RS13MO1
- 2011-2014 EUBerry Project: EU FP7 KBBE-2010-4 Grant Agreement No. 265942

Research Group Description

Provide the name the reference department and a brief description of the research group, including external links, and available instrumentations and infrastructures. max 300 words

Laboratory of Bioenergetics, Department of Clinical Sciences, Faculty of Medicine, Polytechnic University of Marche, https://twitter.com/Bio_Lab_UNIVPM

The group is currently formed by a Researcher, two post-doc researchers, seven PhD students and two master students.
The main research lines of the Bioenergetic Lab lead by Prof. Maurizio Battino focus on the evaluation of the biological effects exerted by different bioactive compounds present in many food matrices (i.e., berries, honey, olive leaves, olive oil, beeswax byproducts, garlic and prickly pear fruits) in several *in vitro* (fibroblasts, breast/colon/liver cancer cells, macrophages, adipocytes), *ex vivo* (red blood cells and white blood cells) and *in vivo* (mice, rats and humans) experimental models. Targeted diseases are those related with oxidative stress and inflammation, such as aging, cancer, obesity and cardiovascular diseases, with the aim to highlight the molecular mechanisms involved in the beneficial effects exerted by these food matrices.

Infrastructure & Equipment: Benchtop centrifuges; Chemical hoods; Biosafety 1 and 2 biological hoods; Autoclave; Basic laboratory equipment (analytical balance, freezer, grinder, etc.); Water purification system; Rotavapor; Cell incubator; Microplate reader; Flow cytometry; PCR apparatus; Western Blot system; Seahorse XF 24 Extracellular Flux Analyzer; HPLC; Multimodal microplate reader; Fluorescent microscope.

Research thematic area

Indicate the MSCA panel and keywords that better describe your field of competence and research thematic area of your interest for a MSCA PF supervision – you may add extra keywords and text if necessary.

MSCA Panel Chemistry (CHE) - Economic sciences (ECO) - Information Sciences and Engineering (ENG) - Environmental and Geosciences (ENV) - Life Sciences (LS) - Mathematics (MAT) - Physics (PHY) - Social Sciences and Humanities (SOC)	**MSCA Keywords** MSCA Panels & Keywords.pdf Link documento	**Free keywords**	**Free text**
Life Sciences	L1- molecular and structural biology (metabolism)	Cancer stem cells	
	L4-Physiology, Pathophysiology and Endocrinology (Cancer and its biological basis)	Oxidative stress	
	L4-Physiology, Pathophysiology and	Inflammation	

	Endocrinology (Metabolism, biological basis of metabolism related disorders)		

Contact details (*including email address of the supervisor*)

Professor Maurizio Battino: Department of Clinical Sciences, Polytechnic University of Marche, Via Pietro Ranieri 65, Ancona 60131, Italy, m.a.battino@univpm.it, Tel.: 0039 071 220 4646,

OPTIONAL:

Title and goals

Provide the title of the topic and a short summary if you already have a project idea.
Projects ideas can also be defined and discussed with potential candidates later.
max 200 words

Anticancer effects of dietary bioactive compounds in mammospheres and colonspheres enriched with Cancer Stem (-like) Cells

Breast and colon cancer represent the most common neoplastic disease worldwide. Many epidemiological studies have found that a diet rich in fruits and vegetables exerts a preventive role in these cancers and, from a preventive point of view, numerous investigations have been made on plant bioactive compounds.
The main objective of this project is to evaluate the effect of dietary polyphenols in mammospheres and colonspheres enriched with Cancer Stem (-like) Cells (CSCs-like). The specific objectives will be:
1. To characterize the dietary polyphenols and their antioxidant capacity.
2. To evaluate the ability of dietary polyphenols to decrease the morphological and physical parameters of mammo/colonspheres enriched with CSCs-like.
3. To investigate the effect of dietary polyphenols on intracellular ROS and apoptotic rate in mammo/colonspheres enriched with CSCs-like.
4. To evaluate the effect of dietary polyphenols to decrease the self-renewal ability of CSCs-like.
5. To investigate the effect of dietary polyphenols to reduce the migration capacity of CSCs-like.
6. To assess the effect of dietary polyphenols on pro-angiogenic factors.
7. To study the effect of dietary polyphenols on the length of telomeres.