

PERSONAL INFORMATION **Brigitta Buttari**

WORK EXPERIENCE

Iscrizione all'Ordine Nazionale dei Biologi, Elenco Speciale sez. A. Numero iscrizione 018247

2004–Present **Researcher at Istituto Superiore di Sanità (National Institute of Health), Rome, Italy.**
New Biomarkers and Clinical Epidemiology Unit,
Department of Cardiovascular and Endocrine-metabolic Diseases, and Aging.

Participant in the project planning, research activity, data sharing, meeting organization and training activity of the following research projects:

- Consorzio Italiano per la genotipizzazione e fenotipizzazione di SARS-CoV-2 e per il monitoraggio della risposta immunitaria alla vaccinazione, 2021.
- The CUORE Project: start of the third survey on the general adult population, 2018-2019.
- The CUORE Project population biobank for epidemiological research in Italy, 2008-2019.
- Progetto BEES (BE a citizEn Scientist) – Notte Europea dei Ricercatori Progetto europeo n. MSCA-NIGHT-2018/2019-European Researchers' Night, Istituto Superiore di Sanità, 28 September 2018.
- Serum sex hormones as markers of high-risk plaques eligible for endarterectomy in patients with carotid atherosclerosis: gender differences. Ateneo Fund - Sapienza University of Rome, 2018.
- Blood inflammatory and immunological factors in patients with carotid atherosclerosis: potential new circulating biomarkers associated to the presence of high risk plaques eligible for endarterectomy. Ateneo Fund - Sapienza University of Rome, 2017.
- Carotid atherosclerosis: a multi-parametric approach to identify circulating biomarkers indicating patients with vulnerable plaques eligible for endarterectomy. Ateneo Fund - Sapienza University of Rome, 2016.
- "Valutazione e modulazione dei fattori di stress ossidativi implicati in differenti condizioni patologiche". Progetto Ateneo 2016. Università "La Sapienza" di Roma. Responsabile Scientifico: Prof.ssa Maria Caterina Grassi.
- "Attività anti-infiammatoria di composti polifenolici nelle malattie cronico-degenerative: Codice C26A15FHES. Progetto Ateneo 2015. Università "La Sapienza" di Roma. Responsabile Scientifico: Prof.ssa Rita Businaro.
- Evaluation of the polyphenolic substance ability to induce autophagy in human macrophages exposed to advanced glycation end products. Ateneo Fund - Sapienza University of Rome, 2016.
- Role of Neuropeptide Y as regulator of macrophage phenotype and functions: a neuroimmune cue in atherosclerosis regression? Immunotools Award 2015.
- Carotid endarterectomy: a multi-parametric approach to identify immunological and inflammatory markers indicating patients at high risk of clinical events. Ateneo Fund - Sapienza University of Rome, 2015.
- Evaluation and pharmacological modulation of the oxidative stress mechanisms involved in different pathological conditions. Ateneo Fund - Sapienza University of Rome, 2015.
- "Ruolo gerarchico di classi di citochine nelle malattie infiammatorie croniche: asse IL-23-IL-17 nella patologia aterosclerotica". Codice C26A14M7PS. Progetto Ateneo 2014. Università "La Sapienza" di Roma. Responsabile Scientifico: Prof.ssa Rita Businaro.
- Biomonitoring and toxicity studies of the pollutants in territory of Taranto (South Italy). Italian Ministry

of Health, CCM 2013.

- "New therapeutic approaches in the human beta-thalassemia treatment: in vitro and in vivo studies." Rare diseases, Italian Ministry of Health, 2008-present.
- Evaluation of oxidative stress in various pathological conditions and study of possible antioxidant agents. Ateneo Funds - Sapienza University of Rome, 2008-present.
- Study of immunity and infections in immunocompromised hosts for lifestyle: experimental and therapeutic implications evidence. Italy-US agreements, 2009-2011.
- Development of new antioxidant drugs. MAE-MIUR-Italia-India Joint Research Projects, 2007, 2008, 2009, 2010.
- Animal research protocol entitled "Anti-inflammatory properties of pamparin in the prevention of atherosclerosis". Research Agreement between Sapienza University of Rome and the company ALFA WASSERMAN, 2008-2010.
- Study of autoimmune pathogenic mechanisms in atherosclerosis and in systemic lupus erythematosus. Italian Ministry of Health, 2006-2009.
- Marie Curie International Reintegration grant (I.J.E.) within the 6th European Community Framework Program.
- Study of chronic infections and molecular mimicry in autoimmune processes involved in atherosclerosis: new therapeutic strategies. Italian Ministry of Health, 2005-2008.
- Study of the role of toll-like receptors in the maturation of human dendritic cells induced by b2-glycoprotein I and development of in vitro immunomodulatory approaches on dendritic cells for the prevention and treatment of atherosclerosis. Italian Ministry of Health, 2005-2008.
- Study of the role of advanced glycation end products (AGEs) in the autoimmune mechanisms in atherosclerosis associated with diabetes mellitus, especially with regard to women's health in post-menopausal age. Italian Ministry of Health, 2005-2008.
- Molecular mimicry and chronic infections implicated in autoimmune processes of atherosclerosis: new therapeutic strategies. Operative unit within the project "Strategies to use probiotic bacteria, bacterial and parasitic products for the treatment of autoimmune and allergic diseases. Italian Ministry of Health 2005.
- Characterization of specific cellular responses to self-antigens in the atherosclerotic lesion and their modulation in vitro by tolerogenic dendritic cells. Operative unit within the project "Dysregulation of the immune system: analysis of the cellular mechanisms involved in autoimmune diseases and allergies". Italian Ministry of Health 2003.
- Strategie di uso di batteri probiotici, prodotti batterici e parassitari per la terapia delle malattie autoimmuni ed allergiche". U.O. "Infezioni croniche e mimetismo molecolare implicati nei processi autoimmuni dell'aterosclerosi: nuove strategie terapeutiche". (6ACF/6). Programma per la Ricerca Sanitaria 2005: Attività di ricerca finalizzata. (Scadenza 21/06/2006; prorogato al 31/12/2008).
- Diagnosis of systemic autoimmune diseases and vasculitis by identifying new immunological markers. ISS fund 2003.
- Production and characterization of native and recombinant autoantigens involved in the pathogenesis of atherosclerosis. Operative unit within the project "Study of molecular and cellular mechanisms in the induction and modulation of chronic inflammatory diseases". Italian Ministry of Health 2002.
- Study of the inflammatory and immune mechanisms in cardiovascular diseases within atherosclerotic etiology. ISS fund 2001, 2002, 2003.
- Immune response in cystic echinococcosis: diagnosis and immune regulation. ISS funds: 2001, 2002, 2003.
- Development and validation of existing methods in the context of the European Pharmacopoeia, in particular as regards the interferon alpha and gamma. ISS fund 2000.

2017, 2018, 2020

Lectures in Pharmacovigilance of Nutraceutical Products.

Master's Degree in "Stress, Sport and Nutrition" Sapienza University of Rome.

26th August-30th September 2019

Supervisor of European Molecular Biology Organization (EMBO) Short-Term Fellowship n. 8142.

Dr. Sarmistha Saha from SERB- National Post Doctoral Fellow in Materials Science and Engineering, at Indian Institute of Technology Gandhinagar, Palaj, Gandhinagar, India. Project title: " Evaluation of Lupeol effects on the pro-inflammatory signalling triggered in macrophages by 7-keto-cholesterol: new perspectives in the therapy of atherosclerosis".

2013 **Supervisor of PhD student Elif Inci Ozturk from Hacettepe University (Ankara, Turkey) during her ERASMUS EXCHANGE for ImmunoTools Award 2013 PhD**

2000-2019 **Undergraduate teaching activities**

Conceptualization of experimental research activities, methodology, data curation, formal analysis, revision and editing of thesis manuscript for degree course in Biological Science, Biology Applied to Biomedical Research and Chemistry and Pharmaceutical Technologies.

Thesis supervisor for Luca Segoni, thesis titled " Valutazione della capacità degli oxisteroli di attivare e polarizzare i macrofagi umani in vitro: possibile ruolo nella patogenesi dell'aterosclerosi". Bachelor's degree in Biological Sciences, Sapienza University of Rome, Jul 2011.

Thesis supervisor for Luca Segoni, thesis titled "Effetto pro-infiammatorio del 7-chetosterolo su macrofagi umani polarizzati in vitro: potenziale bersaglio terapeutico nell'aterosclerosi".

Master degree in Applied Biology for Research Biomedicine Biologia Applicata alla Ricerca Biomedica. Sapienza University of Rome, Jul 2013.

EDUCATION AND TRAINING

2003-2008 **PHD in Microbiology, Immunology and Infective diseases**

University of Rome Tor Vergata, Rome (Italy)

Thesis title: "Chronic and acute alcohol exposure prevents monocyte-derived dendritic cells from maturing in response to microbial stimuli".

Thesis supervisor Prof. Paola Sinibaldi-Vallebona and Dr Rachele Riganò. Thesis performed at the Istituto Superiore di Sanità.

2009 **Scuola di Formazione in Nutrizione Clinica, Accademia Internazionale di Nutrizione Clinica A.I.Nu.C, Rome**

Sep 2000-Jun 2003 **Post graduate specialization in Applied Biotechnology**

Sapienza University of Rome, Rome (Italy)

Thesis title: "Phenotypic and functional maturation of dendritic cells induced by carotid atherosclerotic plaque extracts: in vitro model for the study of the immunosuppressive drugs"

Thesis supervisor Prof. Enza Piccolella and Dr Rachele Riganò. Thesis performed at the Istituto Superiore di Sanità

2002 **State Exam for Biologist at Università degli Studi di Roma Tor Vergata, II session.**

Jun 1999-May 2000 **Fellowship at the Immunology laboratory**

Istituto Superiore di Sanità, Rome (Italy)

- 12-Month practical training post degree at the ISS Immunology laboratory and Università degli Studi di Roma "La Sapienza" 15/09/99 - 14/09/00.
- Training course for the management of chemical, physical and biological risks. ISS; February 1999.
- Advanced course for human antigen-specific CD4 T cell line and clone preparation and characterization. Advanced Biotechnology Center of Genoa; November 1999.
- Theoretical and practical course for the personnel working with laboratory animals,

organized by the Quality and Safety Service for Animal Experimentation. ISS; March 2000.

- Advanced course on Immunology of Infectious Diseases, University of Rome Tor Vergata; April 2000.
- Study of Native and recombinant antigens in the immunodiagnosis of human cystic echinococcosis. ISS; 1999-2000.
- Course on "Cell Cycle and Apoptosis", Cytometry National School GIC, University of Urbino, Urbino; October 2000.
- Innovative applications in Cytometry", Cytometry National School GIC, University of Urbino, Urbino; October 2000.
- The microscopic techniques in the study of structural and functional characteristics of cells in culture, ISS, Rome; October 2000.
- Advanced course on FACSCalibur/FACStation instrument and software Becton Dickinson, Rome; December 2000.

Sep 1992–May 1999 **Degree in Biological Science, subject Physiopathology**

Sapienza University of Rome, Rome (Italy)

Cytokine gene expression in peripheral blood mononuclear cells (PBMC) from patients with pharmacologically treated cystic echinococcosis.

Thesis supervisor prof. Enza Piccolella and Dr Rachele Riganò, thesis performed at the Istituto Superiore di Sanità.

Sep 1987–Jul 1992 **Bachelor**

Liceo Scientifico Leonardo da Vinci, Sora (Italy)

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s) English

Understanding		Speaking		Writing
Listening	Reading	Spoken interaction	Spoken production	
C1	C1	B2	B2	C1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
 Common European Framework of Reference for Languages

Communication skills Good communication skills developed as researcher, tutor and speaker within the framework of specific projects

Organisational / managerial skills Good leadership (supervisor for undergraduate and PhD students, postdoctoral researcher) and good organisational/managerial skills developed within the framework of specific projects.

Job-related skills Good experience in molecular and cellular biology basic and clinical research in immunological and cardiovascular field. Hints of epidemiology of cardiovascular diseases.

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Basic user	Independent user	Basic user

Digital competences - Self-assessment grid

Good command of MS Office tools (Word, Excell, PowerPoint), Internet Explorer, and email.

Good experience with programs related to biological research: polypeptide sequence analysis, flow cytometry data analysis with CellQuest, FACSDiva, FlowJo and Kaluza, statistical analysis with Prism and IBM SPSS, image analysis with Photoshop and Image J, bibliography management with Endnote and Mendeley.

Driving licence B

ADDITIONAL INFORMATION

Publications h-index: 24 Web of Science; ORCID ID 0000-0002-0575-4106

More than 66 original in extenso articles published on international journals with peer review; 2 invited chapter book.

Last publications

1: Donfrancesco C, Lo Noce C, Russo O, Minutoli D, Di Lonardo A, Profumo E, **Buttari B**, Iacone R, Vespasiano F, Vannucchi S, Onder G, Galletti F, Galeone D, Bellisario P, Gulizia MM, Giampaoli S, Palmieri L, Strazzullo P. Trend of salt intake measured by 24-h urine collection in the Italian adult population between the 2008 and 2018 CUORE project surveys. *Nutr Metab Cardiovasc Dis.* 2020 Oct 31:S0939-4753(20)30456-7. doi: 10.1016/j.numecd.2020.10.017. Epub ahead of print. PMID: 33546949.

2: Donfrancesco C, Lo Noce C, Russo O, **Buttari B**, Profumo E, Minutoli D, Di Lonardo A, Iacone R, Vespasiano F, Vannucchi S, Onder G, Galletti F, Galeone D, Bellisario P, Di Lenarda A, Giampaoli S, Palmieri L, Strazzullo P. Trend in potassium intake and Na/K ratio in the Italian adult population between the 2008 and 2018 CUORE project surveys. *Nutr Metab Cardiovasc Dis.* 2020 Nov 23:S0939-4753(20)30492-0. doi: 10.1016/j.numecd.2020.11.015. Epub ahead of print. PMID: 33546944.

3: Saha S, **Buttari B**, Panieri E, Profumo E, Saso L. An Overview of Nrf2 Signaling Pathway and Its Role in Inflammation. *Molecules.* 2020 Nov 23;25(22):5474. doi: 10.3390/molecules25225474. PMID: 33238435; PMCID: PMC7700122.

4: Saha S, Profumo E, Tognà AR, Riganò R, Saso L, **Buttari B**. Lupeol Counteracts

the Proinflammatory Signalling Triggered in Macrophages by 7-Keto-Cholesterol: New Perspectives in the Therapy of Atherosclerosis. *Oxid Med Cell Longev*. 2020 Sep 27;2020:1232816. doi: 10.1155/2020/1232816. PMID: 33062133; PMCID: PMC7537694.

5: **Buttari B**, Profumo E, Caprari P, Massimi S, Sorrentino F, Maffei L, Gabbianelli M, Riganò R. Phenotypical and functional abnormalities of circulating neutrophils in patients with β -thalassemia. *Ann Hematol*. 2020 Oct;99(10):2265-2277. doi: 10.1007/s00277-020-04213-0. Epub 2020 Aug 15. PMID: 32803313.

6: **Buttari B**, Profumo E, Capozzi A, Saso L, Sorice M, Riganò R. Post-translational modifications of proteins in antiphospholipid antibody syndrome. *Crit Rev Clin Lab Sci*. 2019 Dec;56(8):511-525. doi: 10.1080/10408363.2019.1650714. Epub 2019 Aug 26. PMID: 31448653.

Editorial activities 2016

Lead Guest Editor for *Oxidative Medicine and Cellular Longevity* -Special Issue on "Antioxidant and Immunomodulatory Compounds in Cardiovascular Repair"

2001-present

Reviewer for *Journal of Immunology*, *PlosOne*, *Oxidative Medicine and Cellular Longevity*, *Blood*.

On line publishing social media

Commentary article on *Brainimmune.com*, 1th June 2014. Buttari B, Profumo E, Riganò R. A Hierarchical Cytokines Framework defining groups of Chronic Inflammatory Diseases: learning from cytokine-targeted therapies".

Commentary article on *Brainimmune.com*, 22th Oct 2015. Buttari B and Elenkov I. New Evidence that Peripheral Nerves Sense Infection and Drive IL-23 Production by Skin Dendritic Cells.

Commentary article on *Brainimmune.com*, 25th Oct 2016. Buttari B. β 2-Adrenergic Receptor Activation Promotes M2 Polarization of Gut Macrophages: How the Brain-Gut Axis Maintains Tissue Homeostasis.

Press review

Comunicato su Primo Piano- ISS 09/06/2014. Studio ISS, identificato il legame tra sistema nervoso e sistema immunitario.

"Studi di biomonitoraggio e tossicità degli inquinanti presenti nel territorio di Taranto" – CCM 2013. Stakeholder, ISS and Italian Ministry of Health: Riganò R, Buttari B, Profumo E. CNR, Rome 7th Dec 2016.

ISS web page: Comunicazione e informazione: Relazione Finale Studi di biomonitoraggio e tossicità degli inquinanti presenti nel territorio di Taranto-CCM 2013, 6th Dec 2016.

Honours and awards

- 2017 EAS Travel Grant to attend EAS 2017 Prague, Czech Republic, April 23-26.
- 2016 " PEARLS IN AUTOIMMUNITY: TOP CANDIDATES FOR THE MAI AWARD 2016" 10th International Congress on Autoimmunity (Autoimmunity 2016) Leipzig, Germany, April 6-10, 2016
- 2015 ImmunoTools special Award 2015
- 2009 IUBMB Advanced Course on "Mechanisms and Consequences of Free Radical-Mediated Oxidative Protein Modifications", Federation of European Biochemical Societies travel fund, Antalya, Turkey.
- 2007 EMBO Conference Young Researcher Travel Grant, Co-Sponsored by European Network of Immunology Institute (ENII) and Società italiana di Immunologia, Immunologia Clinica e Allergologia (SIICA); Capo Caccia, Italy.
- 2006 5th International Congress on Autoimmunity travel grant; Sorrento, Italy.
- 2005 4th SIICA National Conference travel grant, Società italiana di immunologia, Immunologia Clinica e Allergologia (SIICA); Brescia, Italy.
- 2005 ERAB Young Investigators Award elected by the European Research Advisory Board of European Society for Biomedical Research on Alcoholism (ESBRA); Canterbury, UK. Award given to reward quality and innovation of basic scientific research as principal investigator in the project entitled: "Ethanol impair the maturation and function of monocyte-derived dendritic cells obtained from alcoholics and healthy subjects".
- 2004 IX European Multicolloquium of Parasitology- EMOP 9 International Fellowship for the project entitled: "Maturation of dendritic cell 2 phenotype by *Echinococcus granulosus* antigens"; Valencia, Spain.

- 2000 Immunobiology of Infectious Diseases workshop travel grant, Società italiana di immunologia, Immunologia Clinica e Allergologia (SIICA); Massa Marittima, Italy.

Memberships Member of the "Società italiana di immunologia, Immunologia Clinica e Allergologia", 1999-Present;
Member of European Federation of Immunological Societies, 2009-2010;
Member of The Ruggero Ceppellini Advanced School of Immunology, 2005;
Member of the "Società Italiana di Biochimica e Biologia Molecolare", 2009-2010;
Member of the European Biochemical Societies; 2009-2010.
Member of the European Atherosclerosis Society (EAS), 2008-2020;
Member of Italian group of Cytometry; 1999-2004.
Founding member of the Italian Study Group of Biomaterials in Surgery, 2005-Present.

The undersigned authorizes data processing pursuant to the EU REG 2016/679 and to art. 4 and art. 26 DL 14th march 2013, n. 33 Code regarding personal data protection

Rome, 14th February 2021