

Allegato B

Procedura valutativa per la copertura di n. 1 posto di Professore di ruolo di I fascia, SC 05/E1 - SSD BIO/10, presso il Dipartimento di Scienze Biochimiche "A. Rossi Fanelli" - Facoltà di Farmacia e Medicina (SPC: 2023-1150-1461-206802). Codice bando: 2023POR005.

Decreto Rettrice Università di Roma "La Sapienza" D.R. n. 1862/2023 del 12/07/2023

EUGENIO BARONE

Curriculum Vitae

Place: Rome

Date: 24/07/2023

Part I – General Information

Full Name

Eugenio Barone

Current Position

Associate Professor of Biochemistry SSD BIO/10
Department of Biochemical Sciences "A. Rossi-Fanelli"
Sapienza University of Rome

ORCID

0000-0002-7028-4251

Scopus Author ID

24472961100

H-Index

39 (Scopus)

N° of Publications

91 (2008-2023)

Citations

4058 (2008-2023)

Patents

1

Part II – Education

Type	Year	Institution	Notes (Degree, Experience,...)
Master	05/2006	Faculty of Pharmacy University of Calabria	Master's degree in Pharmaceutical Chemistry and Technology (summa cum laude)
PhD	02/2011	Institute of Pharmacology, Catholic University School of Medicine Rome	Ph.D. in Neuroscience
Licensure 01	12/2006	Faculty of Pharmacy, University of Calabria	National Qualification as Pharmacist
Licensure 02	2014	Italian Ministry of Education, University and Research (MIUR)	National Scientific Qualification as Associate Professor of Biochemistry (SSD BIO/10)
Licensure 03	2017	Italian Ministry of Education, University and Research (MIUR)	National Scientific Qualification as Full Professor of Biochemistry (SSD BIO/10)

Part III – Appointments

III.A – Academic Appointments

Start	End	Institution	Position
2020	2022	Faculty of Medicine, Sapienza University of Rome	Faculty member for the Residency in Ophthalmology
10/2019	present	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Associate Professor of Biochemistry (SSD BIO/10)
2017	present	Faculty of Medicine, Sapienza University of Rome	Faculty member for the Residency in Neurology
2017	present	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Faculty member for the PhD School in Biochemistry
10/2016	10/2019	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Assistant Professor of Biochemistry - RTD-b (SSD BIO/10)
04/2015	12/2018	Faculty of Health Sciences, Universidad Autonoma de Chile, Chile	Associate Researcher
03/2016	09/2016	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Post-doctoral Researcher
03/2014	02/2016	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Post-doctoral Researcher under the People Programme (Marie Curie Actions) of the European Union's Seventh Framework Programme (FP7/2007-2013)
01/2012	01/2014	Brain Mind Institute, Swiss Federal Institute of Technology (EPFL), Lausanne, CH	Post-doctoral Researcher
01/2010	01/2011	(a) Department of Molecular and Biomedical Pharmacology and (b) Department of Chemistry, Laboratory of Neurochemistry University of Kentucky, Lexington, (KY), USA	Visiting Scholar

III.B – Other Appointments

Start	End	Institution	Position
2019	present	Sapienza University of Rome	Member of the "Daniel Bovet" Neurobiology Research Center. One of the representative members nominated by the Department of Biochemical Sciences "A. Rossi-Fanelli"
02/2011	07/2011	Institute of Pharmacology, Catholic University School of Medicine in Rome	Post-doctoral Researcher
05/2009	07/2009	Department of Pharmaceutical Sciences, Faculty of Pharmacy, University of Calabria	Visiting Scholar
06/2008	07/2008	Department of Pharmaceutical Sciences, Faculty of Pharmacy, University of Calabria	Visiting Scholar
09/2006	10/2007	Institute of Pharmacology, Catholic University School of Medicine in Rome	Research Assistant
05/2005	05/2006	Institute of General Pathology, Catholic University School of Medicine in Rome	Visiting Scholar
10/2004	04/2005	Hospital Pharmacy, Saint Francis of Paola Hospital, Paola (CS)	Hospital Pharmacy Training
01/2004	06/2004	Faculté de Pharmacie, Université Paris Descartes (Paris V), Paris, FR	Visiting Student, ERASMUS Project

III.C – Member of evaluating commissions

Start	End	Institution	Position
2023		Department of Biochemical Sciences "A. Rossi-Fanelli", Sapienza University of Rome	Member of the Evaluating Commission to assign 1 Research Fellowship type B ("Borsa Junior", n. B/3/2023 Rep. 103 Prot.592 del 20/03/2023) at the Department of Biochemical Sciences.
2022		Department of Biochemical Sciences "A. Rossi-Fanelli", Sapienza University of Rome	Member of the Evaluating Commission to assign 1 Research Fellowship type B ("Borsa Junior", n. B/6/2022 Rep. n.376)

		Prot. n.2013 del 08 settembre 2022) at the Department of Biochemical Sciences.
2022	University of Catania	External Reviewer for the final Thesis of the PhD in Biotechnology entitled "Targeting the Heme Oxygenase enzymatic system as a new approach for anticancer therapy". Student: Antonino Nicolò Fallica. Tutor: Prof. Valeria Pittalà.
2022	Department of Biochemical Sciences "A. Rossi-Fanelli", Sapienza University of Rome	Member of the Evaluating Commission to assign 1 Research Grant ("Assegno di Ricerca", A/4/2022 Rep. n. 360 Prot. n.1924 del 10 agosto 2022) at the Department of Biochemical Sciences.
2022	Department of Biochemical Sciences "A. Rossi-Fanelli", Sapienza University of Rome	Member of the Evaluating Commission for the exam to be admitted at the PhD School in Biochemistry (XXXVII cycle) in partnership with enterprises and Regione Lazio (1585/2022 - Prot. 0044314)
2022	Catholic University School of Medicine, Rome	Member of the Evaluating Commission for a position of "Ricercatore a tempo determinato di tipo A" - SSD/BIO10, 05/E1 BIOCHIMICA GENERALE, DR 8330 del 4/2/2022 Catholic University of the Sacred Heart in Rome (IT).
2022	Department of Biochemical Sciences "A. Rossi-Fanelli", Sapienza University of Rome	Member of the Evaluating Commission to assign 1 Research Grant ("Assegno di Ricerca", n. A/12/2021 Rep. n.393 Prot. n.2093 del 17 novembre 2021) at the Department of Biochemical Sciences.
2021	Universitat De Valencia, Valencia (Spain)	External Member of the Evaluating Commission for the Doctoral Thesis submitted by Mr. Daniel Esteve Moreno (Supervisor Prof. Ana Lloret) ID 9XF01D2W66JAAH32
2021	Department of Biochemical Sciences "A. Rossi-Fanelli", Sapienza University of Rome	Member of the Evaluating Commission for the exam to be admitted at the PhD School in Biochemistry (XXXVII cycle)
2021	Department of Biochemical Sciences "A. Rossi-Fanelli", Sapienza University of Rome	Member of the Evaluating Commission to assign 1 Research Grant ("Assegno di Ricerca", n. A/2/2021 03/02/2021) at the Department of Biochemical Sciences.

2020	present	Catholic University School of Medicine, Rome	External Reviewer for the final Thesis of the PhD in Neuroscience entitled “Meccanismi di alterata plasticità sinaptica: bersagli molecolari comuni tra malattie metaboliche e neurodegenerative”. Student: Francesca Natale. Tutor: Prof. Claudio Grassi.
2020		Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Substitute member of the Evaluating Commission for the admission at the Ph.D. School in Biochemistry (XXXVI cycle).
2019		Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Member of the Evaluating Commission to assign 1 Research Grant (“Assegno di Ricerca”, n. A/05/2018 Rep.262 Prot. 1437 del 12/11/2018) at the Department of Biochemical Sciences.
2019		Department of Pharmacy, Health, and Nutritional Sciences, University of Calabria	External Member of the Evaluating Commission to confer the Master Degree in Pharmaceutical Chemistry and Technology
2018		Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Member of the Evaluating Commission to assign 1 Research Grant (“Assegno di Ricerca”, n. A/05/2017 Rep.330 Prot. 1120 del 04/12/2017) at the Department of Biochemical Sciences.
2018		Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Substitute member of the Evaluating Commission for the admission at the Ph.D. School in Biochemistry (XXXIV cycle).
2018	present	Sapienza University of Rome	Member of Evaluating Commissions to confer the Master Degree in: <ul style="list-style-type: none"> • Genetics and Molecular Biology (LM-6), Faculty of Mathematical, Natural and Physical Sciences; • Pharmaceutical Chemistry and Technology (LM-13), Faculty of Pharmacy and Medicine; • Pharmaceutical Biotechnology (LM-9) Faculty of Pharmacy and Medicine.
2016	present	Faculty of Pharmacy and Medicine, Sapienza University of Rome	Committee member, Biochemistry course (CCL A).

III.D – Tutoring activities

Start	End	Institution	Position
2022	2023	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Supervisor , Barbara Zulli, undergraduate student enrolled at the Pharmaceutical Biotechnology degree, Faculty of Pharmacy and Medicine, Sapienza University of Rome.
2021	2022	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Supervisor , Chiara Lanzillotta, Postdoctoral fellowship (<i>Assegno di Rucerca</i>), Sapienza University of Rome
2020	2021	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Supervisor , Rachele Orazi, undergraduate student enrolled at the Pharmaceutical Chemistry and Technology degree, Faculty of Pharmacy and Medicine, Sapienza University of Rome
2020	present	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Supervisor , Simona Lanzillotta, Ph.D. in Biochemistry (XXXVI cycle), Sapienza University of Rome.
2019	2020	Sapienza School for Advanced Studies (SSAS)	Supervisor for a project presented and performed by Pietro Bertoldo (2019).
2019	present	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Supervisor of students from Higher Education Institutions within the Project “Alternanza Scuola-Lavoro”.
2019	2020	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Supervisor , Sabrina Minicucci, undergraduate student enrolled at the Pharmaceutical Chemistry and Technology degree, Faculty of Pharmacy and Medicine, Sapienza University of Rome.
2018	2019	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Supervisor , Marika Russiniello, undergraduate student enrolled at the Genetics and Molecular Biology degree, Faculty of Mathematical, Natural and Physical Sciences, Sapienza University of Rome.

2018	2019	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Supervisor , Rossella Scarcello, undergraduate visiting student enrolled at the Pharmaceutical Chemistry and Technology degree, Department of Pharmacy, Health and Nutritional Sciences, University of Calabria.
2017	2018	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Supervisor , Graziella Di Giacomo, undergraduate student enrolled at the Pharmaceutical Chemistry and Technology degree, Faculty of Pharmacy and Medicine, Sapienza University of Rome.
2015	2018	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Tutor , Nidhi Sharma, Ph.D. in Biochemistry (XXXI cycle), Sapienza University of Rome.
2015	2018	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Supervisor , Francesca Triani, Ph.D. in Biochemistry (XXXI cycle).
2014	2017	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Tutor , Andrea Arena, Ph.D. in Biochemistry (XXIX cycle), Sapienza University of Rome.
2014	2015	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	Supervisor , Sara Iannelli, undergraduate student, Pharmaceutical Chemistry and Technology degree, Faculty of Pharmacy and Medicine, Sapienza University of Rome.

External tutoring

2023	2023	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	External Supervisor for Margherita Louise Calderaro (Temple University, USA), for an internship in my laboratory. Study of the effects of high-fat diet on the oxidative stress-induced protein post-translational modifications in the brain.
2023	2023	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	External Supervisor for Mathilde Charlier, (Université Catholique de Louvain , UCLouvain), for an internship in my laboratory. Study of the effects of high-fat diet on the alterations of insulin signaling in the brain.

2022	2022	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	External Supervisor for Dr. Joao Vieira, (Department of Experimental Medical Science, Faculty of Medicine, Lund University), for an internship in my laboratory. Study of the effects of intranasal insulin administration on brain functions.
2020	2021	Department of Biochemical Sciences “A. Rossi-Fanelli”, Sapienza University of Rome	External Supervisor for the application submitted by Dr. Antonio Jesus Lopez-Gambaro (<u>Laboratory of Neuropsychopharmacology IBIMA Institute-Málaga</u>) for a postdoctoral internship in my laboratory. Study of the efficacy of the dietary administration of carob fruit-derived inositols D-pinitol (DPIN) and D-chiroinositol (DCI) on brain insulin resistance and inflammation in animal models of disease. Grant by Instituto de Salud Carlos III (M-AES), Spain
2012	2014	Brain Mind Institute, Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland	Tutor , Magda Palczynska and Sebastien Mosser, Ph.D. in Life Sciences

III.E – Other “Organizational/Academic Tasks”

Start	End	Institution	Position
2023	present	Sapienza University of Rome	Appointed as Chair of the “Macroarea B” group for the Sapienza University Research Committee (Commissione Ricerca di Ateneo)
2022	present	Sapienza University of Rome	Appointed as member of the Sapienza University Research Committee (Commissione Ricerca di Ateneo) – decreto 1308/2022, Prot. 0035643 del 12/04/2022; and decreto 1270/2023, Prot. 0046279 del 23/05/2023)
2017	present	Sapienza University of Rome	“Presidente della Commissione d’Aula” for the Admission to Degree in Medicine

Part IV – Teaching experience

Year	Institution	Lecture/Course
2022 – present	Bachelor Program in Pediatric Nursing, Faculty of Medicine, Sapienza University of Rome (Roma Azienda Policlinico Umberto I, L/SNT1)	Biochemistry – 2 CFU BIO/10
2020 - 2022	Residency in Ophthalmology, Faculty of Pharmacy and Medicine, Sapienza University of Rome	Biochemistry – 1 CFU BIO/10
2018 - 2021	Laboratory Safety Course for the students enrolled in the PhD in Biochemistry	Biochemistry – 1 CFU BIO/10
2018 - present	Bachelor Program in Audiometric Techniques, Faculty of Medicine, Sapienza University of Rome (Umberto I Hospital, L/SNT3)	Chemistry and fundamentals of Biochemistry – 2 CFU BIO/10
2018 - present	Bachelor Program in Audioprothetic Techniques, Faculty of Medicine, Sapienza University of Rome (Umberto I Hospital, L/SNT3)	Chemistry and fundamentals of Biochemistry – 2 CFU BIO/10 <u>Referent for the Sapienza University since the AA 2021-22</u>
2017 - 2022	Bachelor Program in Nursing, Faculty of Medicine, Sapienza University of Rome (Corso di laurea L- Az. S. Giovanni Addolorata L/SNT1)	Biochemistry – 2 CFU BIO/10
2017 - present	Bachelor Program in Nursing, Faculty of Medicine, Sapienza University of Rome (Corso di laurea G - ASL Roma 5 - Colferro (RM) L/SNT1)	Biochemistry – 2 CFU BIO/10
2016 - present	Degree in Medicine, Faculty of Pharmacy and Medicine, Sapienza University of Rome (Corso di Laurea A, LM-41)	Biochemistry – 3 CFU BIO/10
2016 - present	Residency in Neurology, Faculty of Pharmacy and Medicine, Sapienza University of Rome	Biochemistry – 1 CFU BIO/10
2015 - present	Degree in Medicine, Faculty of Pharmacy and Medicine, Sapienza University of Rome (Corso di Laurea A, LM-41)	Biochemistry (ADE)
2014 - present	International Medical School of Sapienza University of Rome (Corso di Laurea F, LM-41)	Biochemistry (ADE)
2012 - 2014	Brain Mind Institute, Swiss Federal Institute of Technology (EPFL), Lausanne, CH	Supervisor for master students enrolled at the School of Life Science

Part V - Society memberships, Awards and Honors

V. A – Society Memberships

Year	Title
2021 - present	Member of the Global Association for the Study of Neurodegenerative Diseases
2018 - present	Member of the European Association for the Study of Diabetes (EASD)
2018 - present	Member of the International Society for Neurochemistry (ISN)
2018 - present	Member of the European Society for Neurochemistry (ESN)
2017 - present	Member of the International Society to Advance Alzheimer's Research and Treatment (ISTAART)
2016 - present	Member of the Marie Curie Alumni Association (MCAA)
2015 - present	Member of the Trisomy 21 Research Society (T21RS)
2013 - present	Member of the Italian Society of Biochemistry and Molecular Biology (SIB)
2010 - present	Member of Society for Redox Biology and Medicine (SFRBM)

V. B – Executive roles in National/International Scientific Societies

Year	Title
2023 - present	Appointed as Member of the European College of Neuropsychopharmacology (ECNP) for the “Down Syndrome and Other Genetic Developmental Disorders Network”
2022-2024	Appointed as Chair of the “Strategic Alliances & Outreach” Committee of the Society for Redox Biology and Medicine (SfRBM)
2022-present	Appointed as Member of the Italian Down syndrome Task Force (DS Task Force)
2022-2026	Member of the Executive Board of the Trisomy 21 Research Society (T21RS)
2022-2026	Elected as Chair of the Membership and Sponsorship Committee of the Trisomy 21 Research Society (T21RS)
2020-2022	Appointed as Chair of the “Awards-Junior” committee of the Society for Redox Biology and Medicine (SfRBM)
2020-2024	Elected as Executive Board member of the Society for Redox Biology and Medicine (SfRBM)
2020-present	Appointed as member of the European Brain Research Area (EBRA) for the Trisomy 21 cluster

- 2016-2019 Appointed as **member of the External Marketing/PR Committee** of the Society for Redox Biology and Medicine (SFRBM)
- 2014-2017 Member of the “Gruppo di lavoro Invecchiamento e Patologie Neurodegenerative” hosted by the Italian Society of Biochemistry and Molecular Biology (SIB)
- 2013-2017 Member of the “Gruppo di lavoro Malattie Neurodegenerative” hosted by the Italian Society of Pharmacology (SIF)

V. C – Awards

Year	Title
06/2018	SFRRI 2018 Best Posters Award Society for Free Radical Research International Conference, Lisbon (PT)
2017	Recipient of “Fondo di finanziamento per le attività base di ricerca” ai sensi dell’art. 9 della Legge n. 240/10 from Ministry of Education, University and Research (MIUR)
06/2017	T21RS Travel Award Trisomy 21 Research Society Conference, Chicago (IL), USA
06/2017	AAIC Travel Fellowship Award Alzheimer Association International Conference 2017, London, UK
11/2016	SFRBM travel Award Society for Redox Biology and Medicine, San Francisco (CA), USA
11/2015	SFRBM travel Award Society for Redox Biology and Medicine, Boston (MA), USA
10/2014	Selected Plenary speaker “Giornata delle Eccellenze” meeting organized by the Italian Ministry of Education, Universities and Research (MIUR)
06/2013	EPHAR Fellowship Award Federation of the European Pharmacological Societies
10/2009	Award for the best Poster presented by a young investigator. 34th National Congress of the Italian Society of Pharmacology

V. D – National and International Fellowships received as recipient or awarded on a competitive basis

Year	Title
12/2010-07/2011	Recipient of a Research fellowship funded by “Istituto G. Toniolo di Studi Superiori” Institute of Pharmacology, Catholic University School of Medicine, Rome, IT
06/2010	Selected as recipient of a Research fellowship funded by the Society for Free Radical Biology and Medicine (awarded on a competitive basis) Department of Chemistry – University of Kentucky, Lexington (KY), USA
01/2010-11/2010	Selected as recipient Research fellowship funded by the Italian Society of Pharmacology for research training abroad (awarded on a competitive basis) Department of Chemistry – University of Kentucky, Lexington (KY), USA
01/2010-11/2010	Selected as recipient of Research fellowship funded by Regione Calabria for Master and Ph.D. training (awarded on a competitive basis) Department of Chemistry – University of Kentucky, Lexington (KY), USA
09/2006-10/2007	Recipient of Research fellowship funded by “Istituto G. Toniolo di Studi Superiori” Institute of Pharmacology, Catholic University School of Medicine, Rome, IT
01/2004-06/2004	Selected as recipient of Fellowship funded by University of Calabria for the ERASMUS Project (awarded on a competitive basis) Faculté de Pharmacie, Université Paris Descartes (Paris V) Paris, FR

V. E – Editorial Activities

Year	Title
2022-present	Invited Guest Editor for Antioxidants journal (ISSN 2076-3921) <i>Crosstalk between Cell Redox Homeostasis and Synaptic Functions in Physiological and Pathological Conditions</i>
2022-present	Appointed as Editorial Board Member for Frontiers in Pharmacology – Experimental Pharmacology and Drug discovery section (ISSN 1663-9812)
2021-present	Appointed as Editorial Board Member for Current Biomarkers in Clinical Research, Bentham (ISSN 2773-0808)
2021-present	Invited Guest Editor for International Journal of Molecular Sciences (ISSN 1422-0067) <i>Special Issue: Insulin Signalling and Fat Homeostasis in metabolic and neurodegenerative disorders</i>
2021-2022	Invited Guest Editor for Antioxidants journal (ISSN 2076-3921) <i>Special Issue: Oxidative stress and neurodegenerative disorders II</i>
2020	Appointed as Associate Editor for Antioxidants (ISSN 2076-3921)
2020	Appointed as Associate Editor for Frontiers in Neuroscience (ISSN 1662-453X)

2019-2020	Invited Guest Editor for Antioxidants journal (ISSN 2076-3921) <i>Special Issue: Oxidative stress and neurodegenerative disorders I</i>
2018-2019	Invited Topic Editor for Frontiers in Neuroscience (ISSN 1662-453X) <i>Research topic: Brain insulin resistance in neurodevelopment and neurodegenerative diseases: mind the gap!</i>
2018-2020	Appointed as Member of the Editorial Board of The Open Pharmacology Journal (ISSN 1874-1436)
2017-2020	Appointed as Member of the Editorial Board of Memory Disorders: Research and Clinical Practice
2016-present	Appointed as Member of the Editorial Board of Austin Aging Research
2014	Invited Guest Editor for Current Alzheimer Research (ISSN 1567-2050) Thematic Issue entitled "Oxidative stress and Alzheimer disease: where do we stand?"
2013-present	Appointed as Member of the Editorial Board of Neural Regeneration Research (ISSN 1673-5374)
2010	Translation from English to Italian of the Chapter 60 of Special Aspects of Geriatric Pharmacology - "Basic & Clinical Pharmacology". B.G. Katzung (ed.), 11th America Edition, Lange Med. Books, McGraw-Hill, New York
2008-present	<i>Ad hoc reviewer</i> per Archives of Biochemistry and Biophysics, Lipids, Experimental Gerontology, Biochemical Pharmacology, Neurochemical Research, BBA General Subjects, Proteomics Clinical Application, Neural Regeneration Research, Advances in Alzheimer's Disease, Advances in Aging Research, BRAIN, FRBM, Neurobiology of Disease, Cellular Physiology and Biochemistry, Journal of Alzheimer's Disease, Diabetes, Neuroscience, Scientific Reports, Archives of Biochemistry, BBA Molecular Basis of disease, Scientific Reports, FASEB Journal, PNAS, Antioxidants, International Journal of Molecular Sciences, Trends in Molecular Medicine, Nature Communications, EMBO

V. F – Member of scientific/organizing committee for the following national and international seminars/conferences

Year	Title
2024	Organizer and Chair of the 5th Trisomy 21 Research Society (T21RS) International Meeting to be held in Rome in 2024, IT.
2023	Organizer and Chair of the selected Symposium entitled “Insulin signaling and brain energy metabolism: a key connection for cognitive functions”. International Society for Neurochemistry (ISN), 2023 ISN-ESN biennial Meeting. 8-11 August, 2023. Porto, PT.
2023	“Best Poster Award” Judge during the 48 th Annual Naff Symposium held at the University of Kentucky, Lexington (KY), USA.

- 2022 **Co-Chair for the final conference of the TRISOMY 21 EBRA cluster entitled “Moving forward Down syndrome Research and Innovation”**. University Foundation – Rue d’Egmont, 11 – 1000 Brussels, BE. October 10, 2022
- 2022 **Organizer and Chair of the selected Symposium entitled “Role of insulin signaling in the brain metabolism”**. Brain & Brain PET 2022 International Conference. 29 May– 1 June, 2022. Glasgow, UK.
- 2022 **Chair of the Symposium entitled “Cerebral metabolic regulation”**. Brain & Brain PET 2022 International Conference. 29 May– 1 June, 2022. Glasgow, UK.
- 2022 **Organizer and Chair of the selected Symposium entitled “Extracellular vesicles: an emerging tool in Down syndrome landscape”**. Trisomy 21 Research Society (T21RS) International Meeting. 9-12 June, 2022, Long-Beach (CA), USA.
- 2022 **Organizer and Chair of the selected Symposium** entitled “*Role of insulin signalling in the brain*”. 24th European Society of Neurochemistry (ESN) Biennial Meeting - 8th Conference “Molecular and Cellular Mechanisms of Regulation in the Nervous System” 2022 (Virtual)
- 2022 **Young Investigator Award Judge** during the Annual Meeting of the Society for Redox Biology and Medicine (SfRBM)
- 2021 **Chair of the selected Symposium** entitled “Le alterazioni molecolari dipendenti dall'età”. V Italian Conference on Down Syndrome. 15-16 October, 2021 (Virtual)
- 2021 **Organizer and Chair of the European Workshop “Down syndrome research priorities: Research infrastructures and biocollections”** for the European Brain Research Area (EBRA) – Trisomy21 cluster. November 29, 2021. Center for Genomic Regulation (CGR) Barcelona, Spain
- 2021 **Chair of the Symposium** entitled “*Crosstalk at intra and intercellular levels*”. Italian Society of Biochemistry (SIB) 61st National Meeting. 23-24 September, 2021 (Virtual)
- 2021 **Organizer and Chair of the selected Symposium** entitled “*Redox signaling in the nervous system*”. Society for Redox Biology and Medicine 28th Annual Meeting. 17-20 November, 2021, Savannah (GA), USA
- 2020 **Young Investigator Award Judge** during the Annual Meeting of the Society for Redox Biology and Medicine (SfRBM)
- 2020 **Member of the Scientific Committee** responsible for the organization of the IV Italian National conference on Down Syndrome. 16-17 October, 2020
- 2019 **Organizer and Chair of the selected Symposium** entitled “*Metabolic defects in Down syndrome: from periphery to the brain*”. 3rd International Meeting of the Trisomy 21 Research Society (T21RS), Barcelona, Spain, 5-9 June, 2019

2018 - present **Organizer and Chair** of a series of seminars for the PhD School in Biochemistry and for Daniel Bovet Neurobiology Research Center at Sapienza University of Rome:

- March 3, 2023, Prof. Cristian Ripoli (Department of Neuroscience of Università Cattolica del Sacro Cuore – Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome): *Engineering Proteins To Boost LTP And Memory*;
- September 16, 2022, Dr. Elizabeth Rhea (Department of Medicine, Division of Gerontology and Geriatric Medicine University of Washington, Seattle, USA): *Regulation of insulin BBB transport: implications for Alzheimer's*;
- April 9, 2021, Prof. Mychael V Lourenco (Istituto de Biochimica Medica, Universidade do Brasil): *Protective actions of exercise-related FNDC5/Irisin in memory and Alzheimer's disease*;
- July 5, 2019, Dr. Bindu Diana Paul (The Solomon H. Snyder Dept. of Neuroscience Johns Hopkins University School of Medicine, Baltimore, USA): *Bilirubin links heme metabolism to neuroprotection by scavenging superoxide*;
- May 10, 2018, Prof. Patrick Fraering (Campus Biotech Innovation Park & Foundation Ecllosion, Geneva, Switzerland): *The Emerging Gamma-Secretase Interactome and its Implication in the Pathogenesis of Alzheimer's Disease*;
- March 15, 2018, Prof. Joao Duarte (Department of Experimental Medical Science & Wallenberg Centre for Molecular Medicine, Lund University, Lund, Sweden): *Alterations of brain energy metabolism in insulin resistant diabetes*;

2017 - present Reviewer for the Society for Redox Biology and Medicine (SfRBM) for the Annual Meeting Program

V.G – Dissemination activity

Year	Activity
2023	Organizer and Chair of the Symposium entitled “ <i>Vivere a lungo ed in salute contro l'Alzheimer – Una sfida del nostro tempo</i> ”. Auditorium del Santuario Basilica San Francesco di Paola, March 11, 2023. Paola (CS), IT.
2023	Invited as speaker to talk about Alzheimer's disease during the meeting “ <i>Il modo in cui invecchiamo dipende da come serenamente viviamo</i> ” organized by the Association “Amici Infermieri”. January 14, 2023. Hotel Club Village, Belvedere Marittimo (CS), IT.
2022	Invited as expert on Down syndrome to comment the results of the national survey promoted by the Italian Association of people with Down syndrome (AIPD) and CENSIS called “ <i>Non uno di meno. Come vivono le persone con la sindrome di Down?</i> ”. November 9, 2022. CNEL, Sala del Parlamentino, Rome, IT.
2022	Interview released on IlGiornale.it, an italian national newspaper, to celebrate the annual World Alzheimer's disease day.
2022	Invited to share the results of my research work with the students attending the high school “Istituto Istruzione Superiore – Pizzini Pisani” – Paola (CS), IT.

- 2022 Interview released on “Tg2 – Medicina 33” a TV programme broadcast on Rai 2 channel, to talk about Down syndrome and on the results published by my group on Alzheimer’s&Dementia journal.
- 2021 Interview released on “Medical Excellence TV”, to talk about Down syndrome and on the results published by my group on Alzheimer’s&Dementia journal.
- 2021 Interview released on “Agenzia di stampa DIRE”, to talk about Down syndrome and on the results published by my group on Alzheimer’s&Dementia journal.
- 2021 Zoom meeting organized by the AUSER-Paola to talk about the impact of infodemic during COVID pandemic, with a particular focus on how to correctly interpretate the scientific data.
- Since 2021 Collaboration with the online newspaper “Il Caffè Online” to disseminate research about Alzheimer’s disease and Down syndrome.
- 2020 Presentation entitled “La malattia di Alzheimer, questa perfetta sconosciuta” as part of a meeting organized by the “Associazione Culturale Tirrenica” - Sala consiliare del Comune di Paola (Complesso Sant’Agostino), February 1, 2020. Paola (CS), IT.
- 2019 Participation to the meeting organized by Sapienza University of Rome “*Opportunità di finanziamento per la ricerca nell’ambito delle neuroscienze*” to talk about my experience as recipients of EU/international funds.
- Since 2019 Several interview for national newspapers to talk about Alzheimer’s disease, Down syndrome and their link.
- 2017 **Organizer and Chair of the Symposium** entitled “*La malattia di Alzheimer, conoscerla per affrontarla*”. Sala consiliare del Comune di Paola (Complesso Sant’Agostino), October 11, 2017. Paola (CS), IT.

V. H – Reviewer for national and international funding opportunities

Year	Title
2023 - present	Reviewer for the King Abdullah University of Science and Technology (KAUST)
2022 - present	Reviewer for grants funded by the University of Catania
2020 - present	Reviewer for grants funded by the Jerome-Lejeune Foundation, Paris (FR)
2020 - present	Reviewer for grants funded by the Medical Research Council (MRC), United Kingdom
2019 - present	Reviewer for grants funded by the National Science Centre in Poland
2017 - present	Reviewer for the Alzheimer ‘s Association Grant Program
2020	External reviewer for the “Bando giovani ricercatori protagonisti 2020”, University of Florence (DR n.59 – ANNO 2018). Funding opportunity for a biennial postdoctoral fellowship (Assegno di Ricerca).

V. I – Honors

Year	Title
2019	Neurobiology of Disease Journal Cover for: Sharma N....and Barone E. Vol. 125 May 2019, Pages 176-189. https://www.sciencedirect.com/journal/neurobiology-of-disease/vol/125/suppl/C
2019	Nominated official consultant for Bio-Rad® Laboratories
2019	Invited speaker during the “Opportunità di finanziamento per la ricerca nell'ambito delle Neuroscienze”. <i>An event organized by Daniel Bovet Neurobiology Research Center (CRiN) to present European grants opportunities. Sapienza University of Rome, 18 October, 2019. Rome.</i>
10/2010	Selected among the best young talents at the Catholic University School of Medicine, Rome, Italy, to participate at the Festival of Young Talents promoted by the Ministry of Youth

V. J– Invited Speaker

Year	Title
2023	1. The University of Mississippi Medical Center, Department of Physiology and Biophysics Seminar. <i>Biliverdin reductase-A levels predict alterations of insulin signaling in metabolic disease.</i> 14 June 2023. (Virtual)
2023	2. Sapienza University of Rome – PhD in Biochemistry and PhD in Life Sciences Seminars. <i>Insulin signaling in the Brain and Models Thereof.</i> 23 March, 2023. Rome (IT).
2023	3. University of Kentucky Roundtable Seminars in conjunction with the 48th Annual Naff Symposium. <i>Insulin signaling alterations impair mitochondrial bioenergetics in the brain: identification of a novel molecular mechanism linking metabolic and neurodegenerative diseases.</i> 20 April, 2023. University of Kentucky, Lexington (KY), USA.
2023	4. Second ICOD (Improving COgnition in Down syndrome) Symposium. <i>Neurobiology of cognitive dysfunction in Down syndrome: novel treatment targets.</i> 20-21 March, 2023. Madrid, SP
2023	5. International Society for Neurochemistry (ISN), 2023 ISN-ESN biennial Meeting. <i>Aberrant insulin signalling alters mitochondrial bioenergetics and cell stress response in the brain: a route toward neurodegeneration.</i> 8-11 August, 2023. Porto, PT.
2022	6. International Conference. More than Neurons: changing the paradigm for novel therapeutic avenues. <i>Aberrant crosstalk between insulin signaling and mTOR in young Down syndrome individuals revealed by neuronal-derived extracellular vesicles.</i> 15-17 December, 2022. Torino, IT
2022	7. Dementia Therapeutics and Cognitive Rehabilitation Scientific Meeting. <i>Neural-derived extracellular vesicles (nEVs): a novel approach to identify brain alterations leading to Alzheimer disease.</i> 21-23 November, 2022. University of Calabria, Arcavacata di Rende (CS), IT
2022	8. Society for Redox Biology and Medicine 29th Annual Conference. <i>Loss Of Biliverdin Reductase-A (BVR-A) Impairs Brain Energy Metabolism Favoring The Development Of Neurodegeneration: A Link Between AD And T2DM.</i> 16-19 November 2022, Orlando (FL), USA
2022	9. Redox Webinar Series. Symposium on redox biology and pharmacology in disease. <i>Insulin Signaling in Alzheimer Disease Brain and Models Thereof.</i> 3 November 2022, virtual
2022	10. 10th Croatian Congress of Pharmacology. <i>Crosstalk between oxidative stress and aberrant insulin signalling in the brain: insights for neurodegeneration.</i> 22-25 September 2022. Opatija, Croatia

- 2022 11. **Trisomy 21 Research Society 4th International meeting.** *Aberrant crosstalk between insulin signaling and mTOR in young down syndrome individuals revealed by neuronal-derived extracellular vesicles.* 9-12 June, 2022. **Long-Beach (CA), USA**
- 2022 12. **The 16th International Conference on Alzheimer's and Parkinson's Diseases (AD/PD):** *Aberrant crosstalk between insulin signaling and mtor in young down syndrome individuals revealed by neuronal-derived extracellular vesicles.* 15-20 March, 2022, **Barcelona, SP**
- 2022 13. **Brain & Brain PET 2021 International Conference.** *Role of early alterations of brain insulin signaling in neurodegenerative processes.* 29 May– 2 June, 2022. **Glasgow, UK**
- 2021 14. **V Italian Conference on Down Syndrome** “Alterazioni del pathway dell'insulina e di mTOR nel cervello di bambini con sindrome di Down identificate attraverso l'analisi delle vescicole extracellulari di origine neuronale”, 15-16 October, 2021 (Virtual)
- 2021 15. **19th SINS National Congress (Italian Society for Neuroscience).** *Crosstalk between oxidative stress and aberrant insulin signalling in the brain: insights for neurodegeneration.* 9-11 September, 2021 (Virtual)
- 2021 16. **Society for Redox Biology and Medicine 28th Annual Meeting.** *Insulin signalling regulates mitochondrial bioenergetics in the brain: insight for the development of neurodegenerative diseases.* 17-20 November, 2021, Virtual.
- 2021 17. **Global Association for the Study of Neurodegenerative Diseases, INC. (GASND) first International Meeting.** *Oxidative stress links brain insulin resistance and mitochondrial defects in Down syndrome brain early in life: implication for neurodegeneration.* 22-23 July, 2021 (virtual)
- 2021 18. **Invited Seminar for the Institute of Genetics and Biophysics "Adriano Buzzati-Traverso"-CNR, Naples.** *Role of insulin signalling in regulating brain functions.* May 22, 2021 (Virtual due to COVID-19)
- 2020 19. **Society for Redox Biology and Medicine, 27th Annual Meeting of the Society for Redox Biology and Medicine.** *Oxidative stress links brain insulin resistance and mitochondrial defects in Down syndrome brain early in life: implication for neurodegeneration.* November, 18-20, 2020 (virtual due to COVID-19)
- 2020 20. **IV Italian National conference on Down Syndrome.** *Brain insulin resistance triggers early onset Alzheimer disease in Down syndrome.* 16-17 October, 2020. (virtual due to COVID19)
- 2020 21. **Alzheimer Association International Conference (AAIC).** *Loss of biliverdin reductase-A (BVR-A) impairs beneficial effects of CNS insulin on brain energy metabolism favoring the development of Alzheimer's disease (AD) neuropathology.* 24-29 July, 2020. **Amsterdam, NL (moved virtual due to COVID19)**
- 2020 22. **11th International Conference on Heme Oxygenase and Related Enzymes: From Physiology to Therapeutics.** *Biliverdin reductase-A at the crossroad between insulin signaling and energy metabolism: what's new?* June 28th to July 1st, 2020, **Los Angeles (CL), USA (moved virtual due to COVID19)**

- 2019 23. **Invited Seminar for the PhD School in Morphogenesis & Tissue Engineering.** *Brain insulin resistance: a route toward the development of Alzheimer Disease pathology.* SAIMLAL Department - Histology and Medical Embryology Section, Sapienza University of Rome, 27 November 2019, **Rome, IT**
- 2019 24. **III Convegno Nazionale, Sindrome di Down, dalla diagnosi alla terapia: Recenti Progressi negli approcci terapeutici alla Sindrome di Down.** Università di Napoli Federico II, Scuola di Medicina e Chirurgia, 18-19 Ottobre 2019, **Napoli, IT**
- 2019 25. **Istituto Nazionale di Fisica Nucleare (INFN) Nanoscience and Nanotechnology Annual meeting.** *Neuronal-derived exosomes: a promising tool to identify alterations of brain insulin signaling in Alzheimer disease and Down syndrome.* October 17th, 2019, **Frascati, (Rome), IT**
- 2019 26. **Trisomy 21 Research Society 3rd International meeting.** *Reduced Insulin Receptor Levels in Neuronal-Derived Exosomes Highlights Early Alterations of Brain Insulin Signaling in Down Syndrome.* June 6-9, 2019. **Barcelona, SP**
- 2019 27. **The 14th International Conference on Alzheimer's and Parkinson's Diseases (AD/PD):** *Loss of biliverdin reductase-a limits the oxidative stress-induced Akt-mediated inhibition of Gsk-3 β : a novel molecular mechanism favoring Tau phosphorylation in early stage AD.* March 28, 2019, **Lisbon, PT**
- 2019 28. **Instituto Gulbenkian de Ciencia, Seminar:** *Biliverdin reductase-A: an emerging regulator of the insulin signalling pathway in Alzheimer disease and diabetes.* March 28, 2019, **Lisbon, PT**
- 2018 29. **The Yellow Seminars, Liver Italian Foundation ONLUS: Impairment of Biliverdin reductase-A as a risk factor for the development of insulin resistance in Alzheimer disease and diabetes.** October 26, 2018, **Trieste, IT**
- 2018 30. **54th Annual Meeting of the European Association for the Study of Diabetes (EASD):** *Biliverdin reductase-A mediates the beneficial effects of intranasal insulin administration in Alzheimer disease: a novel molecular mechanism.* October 1-5, 2018, **Berlin, DE**
- 2018 31. **2nd International Meeting of the Trisomy 21 Research Society (T21RS):** *The early onset of brain insulin resistance in Down Syndrome: a bridge toward the development of Alzheimer-like neuropathology.* June 7-11, 2017, **Chicago (IL), USA**
- 2017 32. **Society of Italian Pharmacology (SIF) monothematic meeting "Aging Brain: In Search for Better Neurotherapeutics":** *Biliverdin Reductase-A mediates the beneficial effects of intranasal insulin administration on Alzheimer disease pathology.* May 4-5, 2017, **Cosenza, IT**
- 2016 33. **Society for Redox Biology and Medicine, 23rd Annual Meeting of the Society for Redox Biology and Medicine:** *Improvement of BVR-A activity ameliorates brain insulin resistance in Alzheimer disease following intranasal insulin administration.* November 16-20, 2016, **San Francisco (CA), USA**
- 2016 34. **9th International Conference on Heme Oxygenase:** *Biliverdin Reductase-A inactivation promotes brain insulin resistance in Alzheimer disease: a new paradigm.* September 14-18, 2016, **Prague, Czech Republic**

- 2016 35. **The 2016 Alzheimer’s Disease Congress: *The impairment of Biliverdin Reductase-A promotes insulin resistance in Alzheimer Disease: a novel mechanism.*** June 7-9, 2016, **London, UK**
- 2015 36. **Society for Redox Biology and Medicine, 22nd Annual Meeting of the Society for Redox Biology and Medicine: *Biliverdin Reductase-A Inactivation Promotes Insulin Resistance in Alzheimer Disease: A New Paradigm.*** November 18-21, 2015, **Boston (MA), USA**
- 2012 37. **Ecole Polytechnique Federale de Lausanne (EPFL) – Brain Mind Institute Seminar series: *The oxidative stress hypothesis of Alzheimer's Disease: new insights into mechanisms of neurodegeneration.*** December 5th, 2012, **Lausanne, CH**
- 2012 38. **Society for Free Radical Research International, 16th SFRRRI Biennial Meeting: *Biliverdin Reductase-A: a Novel Drug Target for Atorvastatin in a Dog Preclinical Model of Alzheimer Disease.*** 6-9 September 2012, **London, UK**
- 2011 39. **Il Farmaco: dalla Ricerca alla Salute dell’Uomo, 35th National Congress of the Italian Society of Pharmacology: *Long-term high-dose atorvastatin decreases brain oxidative and nitrosative stress in a preclinical model of Alzheimer disease: a novel mechanism of action.*** September 14 – September 17, 2011, **Bologna, IT**
- 2009 40. **Heme Oxygenases 2009, The 6th International Congress: *Bilirubin and nitric oxide: just married and baby’s arrivals.*** September 30-October 4, 2009, **Miami Beach, (FL), USA**

since 2009 **Poster presenter in more than 20 National and International meetings**

V. K – **Patents and Technology Transfer**

Year	Title
07/2023	DSconnection Project related to the Patent n. 102021000012173 was positively evaluated (17 out of 210 submitted projects) during the first phase of the call “Boost Your Ideas 2023” launched by Lazio INNOVA and admitted to the second phase evaluation – ongoing. Leader Applicant: Eugenio Barone
06/2023	Italian Patent n. 102021000012173 (approved): Composizioni per l’uso nel trattamento di disabilità intellettiva e di malattie neurodegenerative in un soggetto con Sindrome di Down. Owner: Sapienza University – Leader Applicant: Eugenio Barone
2022	Patent Cooperation Treaty (PTC) for the application ID 102021000012173 submitted on April 8 th , 2022 (n. PCT/IB2022/053323) – ongoing. Owner: Sapienza University – Leader Applicant: Eugenio Barone

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

VI.A – grants as PI-principal investigator

Year	Title	Program	Grant value
2023	Translating Genetically Encoded Engineered Proteins Into Therapeutic Strategies For Brain Aging And Related Cognitive Decline	Co-PI , PRIN 2022 funded by the Italian Ministry of Education, Universities and Research (MUR), Project ID 20223S7JKZ	€ 235.000,00
2022	Translating genetically encoded engineered proteins into therapeutic strategies for brain aging and related cognitive decline	PI , Grant from Sapienza University of Rome, SEED Project ID SP1221844C3F1EA5	€ 10.000,00
2022	Alterations of the DPP4/DYRK1A/GSK-3 β axis are associated with intellectual disability and Alzheimer's disease development in Down syndrome: search for novel therapeutic strategies.	PI , Jerome Lejeune Foundation, Project #2175 - GRT-2022B (France's number one funder for research in genetic disorders , develops and funds programs in France and abroad)	€ 80.000,00
2022	Caratterizzazione di un nuovo meccanismo alla base dello sviluppo della malattia di Alzheimer e sue implicazioni terapeutiche	PI , Grant from Banca d'Italia, n. 1130944/22 del 22.07.2022	€ 52.000,00
2021	Brain insulin resistance and mitochondrial defects in Alzheimer disease	PI , Alzheimer's Association, Rapid Program in Dementia (RAPID) Funding, Project ID 830355 (the most important international institution funding studies on Alzheimer disease; ONLY this project awarded in Italy)	\$ 50.000,00
2020	Aberrant insulin signaling contributes to development of alzheimer disease: search for novel therapeutic strategies.	PI , Grant from Sapienza University of Rome "Progetti Medi", Project ID RM120172A3160B53	€ 10.000,00

2020	Aberrant insulin signaling contributes to development of Alzheimer disease in Down syndrome: search for novel therapeutic strategies	PI , Jerome Lejeune Foundation, Project ID Cycle 2019b –#1887 (France's number one funder for research in genetic disorders, develops and funds programmes in France and abroad)	€ 87.000,00
2020	Unravelling a novel mechanism favoring brain insulin resistance development	PI , Alzheimer's Association, Project ID 2019-AARG-643091 (the most important international institution funding studies on Alzheimer disease; ONLY two projects awarded in Italy)	\$ 150.000,00
2019	Unravelling a novel mechanism favoring brain insulin resistance development and its impact on Alzheimer disease neuropathology	PI , Grant from Sapienza University of Rome "Progetti Grandi", Project ID RG11916B87F55459	€ 34.000,00
2017	Biliverdin reductase-A impairment mediates the development of insulin resistance in obesity and T2DM: a novel mechanism of action	PI , Grant from Sapienza University of Rome "Progetti Medi", Project ID RM11715C77336E99	€ 12.000,00
2017	Nuove strategie terapeutiche per la prevenzione della malattia di Alzheimer	PI , Grant from Banca d'Italia, n. 12868/17 del 5.1.2017	€ 50.000,00
2015	Unravelling the impairment of the HO-1/BVR-A system during the progression of Alzheimer disease: new insights for the role of heme	PI , Grant from Sapienza University of Rome "Progetti di Avvio alla Ricerca", Project ID C26N15KPNH	€ 2.000,00
2015	Cross-talk between insulin signalling and oxidative stress in Alzheimer disease: A new paradigm	Co-PI , SIR Programme (Scientific Independence of young Researchers) funded by the Italian Ministry of Education, Universities and Research (MIUR), Project ID RBSI144MTL	€ 170.000,00
2014	The Heme Oxygenase-1/Biliverdin reductase-A system as novel therapeutic target for simvastatin treatment in Alzheimer Disease	PI , Grant from Sapienza University of Rome "Progetti di Avvio alla Ricerca", Project ID C26N1448XN	€ 3.000,00
2014	Biliverdin Reductase-A in brain insulin signaling and oxidative stress-mediated neurodegeneration	PI , People Programme (Marie Curie Actions) of the European Union's Seventh Framework Programme (FP7/2007-2013) - Project ID 624341	€ 180.000,00

VI.B – grants as I- investigator

Year	Title	Program	Grant value
2022	Role of miR-802 in Insulin signaling and its impact on neurodegeneration	I, Alzheimer’s Association, ID 2022- AARG-22-973859	\$ 150.000,00
2022	Defects of mitophagy and mitochondrial activity as essential determinants of Alzheimer's disease in Down Syndrome: promising therapeutic strategy	I, Grant from Sapienza University of Rome “Progetti Grandi”, Project ID RG12117A75C98BE3	€ 71.787,00
2020	Multidisciplinary expansion of Structural Biology at Sapienza: robot for high-throughput macromolecules crystallization	I, Grant from Sapienza University of Rome “Medie Attrezzature”, Project ID MA220172B815780	€ 60.000,00
2020	Aberrant protein palmitoylation: a novel biomarker and therapeutic target in Alzheimer’s disease	I, Italian Ministry of Health “Ricerca finalizzata”	€ 442.000,00
2018	Platform for a precision mass measurement in sequencing of therapeutic proteins (PREMISE)	I, Sapienza University of Rome, Project ID GA118164897F9CB1	€ 512.000,00
2018	The sweet link between aberrant brain metabolism and cognitive decline: A novel role for altered protein O-GlcNAcylation	I, Grant from Sapienza University of Rome “Progetti Grandi”, Project ID RG1181642744DF59	€ 32.000,00
2016	Intranasal rapamycin administration to prevent Alzheimer-like dementia in Down Syndrome	I, Jerome Lejeune Foundation, Project ID 1484 (France’s number one funder for research in genetic intelligence disorders, develops and funds programmes in France and abroad).	€ 26.000,00
2016	Brain insulin resistance in age-related cognitive decline: molecular mechanisms and novel therapeutic approaches	I, Grant from Sapienza University of Rome “Progetti Grandi”, Project ID C26H15JT9X	€ 34.000,00
2014	Alternative methods to animal testing: legal and social, scientific and technological aspects	I, Multidisciplinary project from Sapienza University of Rome, Project ID C26M14Y7P4	€ 15.000,00

VI.C – external agreements

Year	Program	Grant value
2019 - present	Bio-Rad Laboratories, study agreement to develop a protocol for interrogation of proteins contained within neuronal-derived extracellular vesicles	Furniture of material to perform the project

Part VII – Research Activities

Keywords	Brief Description
Alzheimer disease Down Syndrome Type 2 Diabetes Metabolic disorders Oxidative stress Cell Metabolism Insulin signalling Mitochondria Neurodegeneration	<p>Dysfunction of neurotrophic signalling in the brain is a common pathophysiological mechanism leading to cognitive decline in a number of conditions including ageing, neurodegenerative disorders (Alzheimer disease, AD), genetic disorders (Down syndrome, DS) and metabolic diseases (obesity and type 2 diabetes mellitus, T2DM). Insulin and GLP1 signalling act as key regulators for gene expression and cellular metabolism, both events sustaining neuronal activity and synaptic plasticity mechanisms. These neurotrophic signaling also control oxidative metabolism via mitochondrial dynamics, thus protecting neurons against oxidative damage. Actions of insulin and GLP1 in the brains of healthy individuals include central modulation of body metabolism and enhancement or regulation of memory and learning functions. Alterations of brain insulin signalling are early pathogenic events associated with the development of neurodegenerative disorders, while GLP1 and GLP1 mimetics appear promising candidates in overcoming brain insulin signaling and mitochondrial bioenergetics dysfunctions. The overarching goal of my laboratory is to use multidisciplinary approaches to clarify defects of neurotrophic signaling during ageing and neurodegeneration. The research work mainly focuses on:</p> <ol style="list-style-type: none">1. Clarifying the role of insulin and GLP1 signaling in modulating brain metabolism, by unraveling how defects of these pathways are associated with the development of AD-like pathology;2. Evaluating the link between dysfunction of neurotrophic signaling and increased cell oxidative damage in the brain;3. Understanding the impact of metabolic disease (type 2 diabetes mellitus/obesity) on AD and DS neuropathology;4. Evaluating the content of plasma-resident neuronal-derived extracellular vesicles (nEVs) isolated from AD and DS subjects, to identify biomarkers of insulin signaling alterations in the brain of living subjects;5. Evaluating the effects of “metabolic” drugs in recovering brain functions from AD-like neuropathology.

VII.B - Direction or participation to a research group characterized by national or international collaborations

since 2010: Collaboration with the research group led by Prof. D. Allan Butterfield (University of Kentucky, USA, <https://chem.as.uky.edu/users/dabcns>) - Project: Role of oxidative stress-induced proteins post-translational modifications in ageing and neurodegeneration. - 46 papers published in range of this collaboration (<https://pubmed.ncbi.nlm.nih.gov/?term=barone+e+AND+butterfield+da&sort=date>). The collaboration is still ongoing.

since 2010: Collaboration with the research group led by Prof. Elizabeth Head (University of California Irvine, USA, <https://cnlm.uci.edu/elizabeth-head/>). Project: Characterization of the molecular pathways associated with the development of Alzheimer Disease in Down Syndrome individuals. 14 papers published in range of this collaboration (<https://pubmed.ncbi.nlm.nih.gov/?term=barone+e+AND+head+e&sort=date>). The collaboration is still ongoing.

since 2015: Collaboration with the research group led by Prof. Joe Abisambra (University of Florida, USA, <https://neuroscience.ufl.edu/faculty-and-staff-directory/faculty/jose-f-abisambra-ph-d/>). Project: Role of ER stress in Down Syndrome. 2 paper published (link here: <https://www.ncbi.nlm.nih.gov/pubmed/?term=barone+e+AND+abisambra+jf>). The collaboration is ongoing

since 2016: Principal Investigator - I established a new collaboration with the research group led by Prof. Gisella Cavallo (Department of Experimental Medicine, Sapienza University of Rome, https://phd.uniroma1.it/web/MARIA-GISELLA-CAVALLO_nC1716_EN.aspx) - Project: Role of altered biliverdin reductase-A in the development of insulin resistance. 4 papers published (link here: <https://www.ncbi.nlm.nih.gov/pubmed/?term=barone+e+AND+cavallo+mg>) - The collaboration is still ongoing.

since 2017: Principal Investigator - I established a new collaboration with the research group led by Prof. Joao N.M. Duarte (University of Lund, Sweden, [https://portal.research.lu.se/portal/en/persons/joao-duarte\(55d209d1-b14e-45f5-a401-15e4194fa452\).html](https://portal.research.lu.se/portal/en/persons/joao-duarte(55d209d1-b14e-45f5-a401-15e4194fa452).html)). - Project: Identification of early alterations of brain insulin signalling associated with the development of cognitive decline in Type 2 diabetes. – Prof. Duarte and my group are evaluating the impact of metabolic disorders and their link to Alzheimer disease and neurodegeneration. This project aims to evaluate the role of early alterations of brain insulin signalling and how these alterations contribute to cognitive decline and neurodegeneration in Goto-Kakizaki rats (a model of type 2 diabetes). The project is ongoing.

since 2017: Principal Investigator - I established a new collaboration with the research group led by Prof. Claudio Grassi (Department of Neuroscience, Catholic University School of Medicine, Rome, <https://docenti.unicatt.it/ppd2/it/docenti/46420/claudio-grassi/profilo>). - Project: Unraveling the role of biliverdin reductase-A-mediated alterations of brain insulin signalling in defects of synaptic plasticity mechanisms. This project aims to unravel whether biliverdin reductase -A alterations either directly or indirectly promote alterations of synaptic plasticity mechanisms similar to those observed in Alzheimer disease. 1 paper published in range of this collaboration (link here: <https://www.ncbi.nlm.nih.gov/pubmed/?term=barone+e+AND+grassi+c>). - The collaboration is ongoing.

since 2018: Principal Investigator. I established a new collaboration with the research group led by Prof. Solomon Snyder (John Hopkins University, USA, <http://neuroscience.jhu.edu/research/faculty/83>) and Dr. Bindu Diana Paul (John Hopkins University, USA, <https://www.hopkinsmedicine.org/profiles/results/directory/profile/8123326/bindu-paul>) - Project: Unraveling the role of biliverdin reductase-A in the regulation of brain insulin signalling pathway by using BVR-A knock out mice. Prof. Snyder and Dr. Paul group generated BVR-A knock out mice (link here: <https://www.ncbi.nlm.nih.gov/pubmed/31353321>) that were provided to my group for studying alterations

of brain insulin signaling. 1 paper published in range of this collaboration (<https://pubmed.ncbi.nlm.nih.gov/32727065/>). The collaboration is ongoing.

since 2018: Principal Investigator - I established a new collaboration with the research group led by Prof. Valeria Pittalà (Department of Drug Sciences, University of Catania, <http://www.dsf.unict.it/docenti/valeria.pittala>) and Prof. Loredana Salerno (Department of Drug Sciences, University of Catania, <http://www.dsf.unict.it/docenti/loredana.salerno>). Project: Evaluation of the activity of novel specific heme oxygenase-1 stimulator in a mouse model of Down Syndrome. This project aims to test the stimulating activity of novel molecule (synthesized by Prof. Pittalà and Salerno) in a mouse model of Down Syndrome available at my lab. My research group has a long experience in the study of heme oxygenase/biliverdin reductase system, that has been found to be altered also in Down syndrome among the others. The collaboration is ongoing.

since 2019: Principal Investigator – I established a new collaboration with the research group led by Prof. Mara Dierssen (Centre for Genomic Regulation, Barcelona, Spain, <https://www.crg.eu/en/programmes-groups/dierssen-lab>) . Project: Role alterations of insulin signaling in Down syndrome. Prof. Mara Dierssen is one of the leading experts in the field of Down Syndrome. Our groups are investigating the link between peripheral and brain metabolic alterations with regard to the role of insulin signalling in Down Syndrome. 1 paper published in range of this collaboration (<https://pubmed.ncbi.nlm.nih.gov/32733190/>). The collaboration is ongoing.

since 2019: Principal Investigator - I established a new collaboration with the research groups led by Dr. Diletta Valentini (Pediatric and Infectious Disease Unit, Bambino Gesù Children's Hospital, IRCCS, Rome, http://www.ospedalebambinogesu.it/bambini-con-la-sindrome-di-down#.XsEP85pS_OQ) and Dr. Angelo Carfi (Department of Geriatrics, catholic University School of Medicine, Rome, <https://www.policlinicogemelli.it/medici/dott-angelo-carfi/>). Project: Aberrant insulin signaling contributes to development of Alzheimer disease in Down syndrome: search for novel therapeutic strategies. The collaboration is ongoing.

since 2020: Principal Investigator - I established a new collaboration with the research groups led by Prof. Andres Trostchansky (Departamento de Bioquímica, Universidad de la República, Uruguay, <https://udelar.academia.edu/AndrésTrostchansky/CurriculumVitae>). Project: Role of increased oxidative stress levels in neurodegenerative disorders. The collaboration is ongoing.

since 2020: Principal Investigator - I established a new collaboration with the research groups led by Prof. Emanuele Marzetti (Dipartimento Scienze dell' Invecchiamento, Ortopediche e Reumatologiche, Catholic University of the Sacred Heart, <https://www.policlinicogemelli.it/medici/dott-emanuele-marzetti/>). Project: Evaluation of insulin signaling-associated proteins in plasma-resident neuronal-derived extracellular vesicles isolated from Down syndrome individuals (<https://pubmed.ncbi.nlm.nih.gov/34812584/>). The collaboration is ongoing.

since 2021: Principal Investigator - I established a new collaboration with the research groups led by Prof. Patrizia Mecocci (Dipartimento di Medicina e Chirurgia, Sezione di Gerontologia e Geriatria, Università di Perugia, <https://www.unipg.it/personale/patrizia.mecocci/cv>). Project: Evaluation of

senescence markers in plasma-resident neuronal-derived extracellular vesicles isolated in aged people at risk of dementia. The collaboration is ongoing.

Since 2022: Principal Investigator – I established a collaboration with Prof. Cristian Ripoli (Department of Neuroscience, Catholic University School of Medicine, Rome, <https://docenti.unicatt.it/ppd2/it/docenti/46796/cristian-ripoli/profilo>) and Dr. Virginia Boccardi (Dipartimento di Medicina e Chirurgia, Sezione di Gerontologia e Geriatria, Università di Perugia, <https://www.unipg.it/personale/virginia.boccardi>) for studying the effects of aging on synaptic plasticity and how to cope with new approaches to rescue synaptic plasticity functionality. The project entitled “Translating Genetically Encoded Engineered Proteins Into Therapeutic Strategies For Brain Aging And Related Cognitive Decline” has been funded with a PRIN grant from the Italian Ministry of Education, Universities and Research (MIUR) in 2023. The collaboration is ongoing.

Part VIII – Summary of Scientific Achievements

Product type	Number	Year (Start-End)	Database
Articles in peer-reviewed and indexed international Journals (all the journals have an IF)			
Total articles	91	2008-2023	Scopus
<i>in the last 5 years*</i>	39	2018-2023	
<i>in the last 10 years*</i>	60	2013-2023	
*calculated as indicated in art. 1 of the current call			
Normalized Total articles^o	6,0	2008-2023	Scopus
^o Total articles divided by the academic seniority (years from the first publication)			
Hirsch (H) index	39	2008-2023	Scopus
Normalized H index[#]	2,6	2008-2023	Scopus
[#] H index divided by the academic seniority (years from the first publication)			
Total IF	503,04	2008-2023	Journal of Citation Reports (JCR)
Mean IF per article	5,53	2008-2023	
Total Citations	4058	2008-2023	Scopus
Average Citations per Product	44,6	2008-2023	Scopus
Last and corresponding author	19	2008-2023	Scopus
<i>in the last 5 years*</i>	16	2018-2023	
<i>in the last 10 years*</i>	19	2013-2023	
Last author (not corresponding)	6	2008-2023	Scopus
<i>in the last 5 years*</i>	1	2018-2023	
<i>in the last 10 years*</i>	2	2013-2023	
First author	20	2008-2023	Scopus
<i>in the last 5 years*</i>	3	2018-2023	
<i>in the last 10 years*</i>	11	2013-2023	
Second author	7	2008-2023	Scopus
<i>in the last 5 years*</i>	0	2018-2023	
<i>in the last 10 years*</i>	2	2013-2023	

% first/last/corr. (45 out of 91 articles)	49%	2008-2023
<i>in the last 5 years* (20 out of 39 articles)</i>	51 %	2018-2023
<i>in the last 10 years* (32 out of 60 articles)</i>	53 %	2013-2023

% first/second/last/corr.		
(52 out of 91 articles)	57%	2008-2023
<i>in the last 5 years* (20 out of 39 articles)</i>	51 %	2018-2023
<i>in the last 10 years* (34 out of 60 articles)</i>	57 %	2013-2023

*calculated as indicated in art. 1 of the current call

Chapter in Scientific and Indexed Books	1	2008-2023	Scopus
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Part IX– Selected Publications (16 out of 91)

List of the publications selected for the evaluation. For each publication report title, authors, reference data, journal IF (if applicable), citations, press/media release (if any).

- IF (publication year) is from *Incites-JCR Journal Citation Reports* database. For papers published in 2023 the last available IF is indicated
 - Citations number is from *Scopus* database;
 - All scientific publications are from *Medline (PubMed.gov)* & *Scopus* database
1. Cimini FA, Tramutola A, Barchetta I, Ceccarelli V, Gangitano E, Lanzillotta S, Lanzillotta C, Cavallo MG, **Barone E* (Corresponding author)**. Dynamic changes of BVRA protein levels occur in response to insulin: a pilot study in humans. *Int J Mol Sci* (2023), 24(8):7282.
Citations: 0 IF (2022): 5.60
 2. Tramutola A, Lanzillotta S, Aceto G, Pagnotta S, Ruffolo G, Cifelli P, Marini F, Ripoli C, Palma E, Grassi C, Di Domenico F, Perluigi M, **Barone E* (Corresponding author)**. Intranasal administration of KYCCSRK peptide rescues brain insulin signaling activation and reduces Alzheimer’s Disease-like neuropathology in a mouse model for Down syndrome. *Antioxidants* (2023), 12(1):111.
Citations: 1 IF (2022): 7.00
 3. Perluigi M, Picca A, Montanari E, Calvani R, Marini F, Matassa R, Tramutola A, Villani A, Familiari G, Di Domenico F, Butterfield DA, Oh KJ, Marzetti E, Valentini D, **Barone E* (Corresponding author)**. Aberrant Crosstalk between Insulin signaling and mTOR in young Down Syndrome Individuals Revealed by Neuronal-derived Extracellular Vesicles. *Alzheimer’s & Dementia* (2022) 18:1498-1510
Citations: 6 IF (2022): 14.00
 4. Cimini FA, Barchetta I, Zuliani I, Pagnotta S, Bertocchini L, Dule S, Zampieri M, Reale A, Baroni MG, Cavallo MG and **Barone E* (Corresponding author)**. Biliverdin Reductase-A Protein Levels Are Reduced in Type 2 Diabetes and Are Associated with Poor Glycometabolic Control. *Life Sci* (2021), 284:119913
Citations: 7 IF (2021): 6.78
 5. Lanzillotta C, Tramutola A, Di Giacomo G, Marini F, Butterfield DA, Di Domenico F, Perluigi M, **Barone E* (Corresponding author)**. Insulin resistance, oxidative stress and mitochondrial defects in Ts65dn mice brain: a harmful synergistic path in Down syndrome. *Free Rad Biol Med* (2021), 165:152-170.
Citations: 21 IF (2021): 8.10
 6. Ceccarelli V, Barchetta I, Cimini FA, Bertocchini L, Chiappetta C, Capoccia D, Carletti R, Di Cristofano C, Silecchia G, Fontana M, Leonetti F, Lenzi A, Baroni M, **Barone E* (Corresponding author)** and Cavallo MG*. Reduced biliverdin reductase-A expression in visceral adipose tissue is associated with adipocyte dysfunction and NAFLD in human obesity. *Int J Mol Sci* (2020), 21:9091
Citations: 11 IF (2020): 5.92

7. Lanzillotta C, Zuliani I, Vasavda C, Snyder SH, Paul BD, Perluigi M, Di Domenico F, **Barone E***(*Corresponding author*). BVR-A deficiency leads to autophagy impairment through the dysregulation of AMPK/mTOR axis in the brain: implications for neurodegeneration. *Antioxidants* (2020) 9:671
Citations: 12 IF (2020): 6.31

8. Tramutola A, Lanzillotta C, Di Domenico F, Head E, Butterfield DA, Perluigi M, **Barone E*** (*Corresponding author*). Brain insulin resistance triggers early onset Alzheimer disease in Down Syndrome. *Neurobiol Dis* (2020) 137:104772
Citations: 39 IF (2020): 5.99

9. Cimini FA, Arena A, Barchetta I, Tramutola A, Ceccarelli V, Lanzillotta C, Fontana M, Bertocchini L, Leonetti F, Capoccia D, Silecchia G, Di Cristofano G, Chiappetta C, Di Domenico F, Baroni MG, Perluigi M, Cavallo MG, **Barone E*** (*Corresponding author*). Reduced biliverdin reductase-A are associated with early alterations of insulin signalling in obesity. *BBA Mol Bas Dis* (2019) 1865: 1490-1501.
Citations: 26 IF (2019): 4.35

10. Sharma N, Tramutola A, Lanzillotta C, Arena A, Blarzino C, Cassano T, Butterfield DA, Di Domenico F, Perluigi M, **Barone E*** (*Corresponding author*). Loss of biliverdin reductase-A favors Tau hyperphosphorylation in Alzheimer's disease. *Neurobiol Dis* (2019) 125:176-189.
Citations: 40 IF (2019): 5.33

11. Di Domenico F, Tramutola A, **Barone E**, Lanzillotta C, Defever O, Arena A, Zuliani I, Foppoli C, Iavarone F, Vincenzoni F, Castagnola M, Butterfield DA and Perluigi M. Restoration of aberrant mTOR signaling by intranasal rapamycin reduces oxidative damage: focus on HNE-modified proteins in a mouse model of Down Syndrome . *Redox Biol* (2019) 23:101162
Citations: 40 IF (2019): 9.99

12. Triani F, Tramutola A, Di Domenico F, Sharma N, Butterfield DA, Head E, Perluigi M, **Barone E*** (*Corresponding author*). Biliverdin reductase-A impairment links brain insulin resistance with increased A β production in an animal model of aging: Implications for Alzheimer disease. *BBA-Molecular Basis of Diseases* (2018) 1864: 3181-3194.
*Selected to be included in the **BBA Collection** on [Cellular Aging and Senescence](#) in 2019*
Citations: 29 IF (2018): 4.35

13. **Barone E**, Tramutola A, Triani F, Calcagnini S, Di Domenico F, Ripoli C, Gaetani S, Grassi C, Butterfield DA, Cassano T and Perluigi M. Biliverdin reductase-A mediates the beneficial effects of intranasal insulin administration in Alzheimer disease. *Molecular Neurobiology* (2019) 56: 2922-2943.
Citations: 58 IF (2019): 4.5

14. **Barone E**, Di Domenico F, Cassano T, Arena A, Tramutola A, Lavecchia MA, Coccia R, Butterfield DA, Perluigi M. Impairment of biliverdin reductase-A promotes brain insulin resistance in Alzheimer disease: A new paradigm. *Free Rad Biol Med* (2016) 91: 127-142.

Citations: 84 IF (2016): 5.60

15. **Barone E**, Cenini G, Di Domenico F, Noel T, Wang C, Perluigi M, St Clair DK, Butterfield DA. Basal brain oxidative and nitrative stress levels are finely regulated by the interplay between superoxide dismutase 2 and p53. *J Neurosci Res* (2015) 93: 1728-1739.

Citations: 18 IF (2015): 2.69

16. **Barone E**, Mosser S, Fraering PC. Inactivation of brain Cofilin-1 by age, Alzheimer's disease and γ -secretase. *BBA – Molecular basis of Disease* (2014) 1842: 2500-2509.

Citations: 44 IF (2014): 4.88

Total articles selected for the evaluation: **16**

Last & corresponding author: in **11** of them

First author: in **4** of them

% first/last/corresponding author: **94%**

Total IF: **101,39**

(Incites JCR Journal Citation Reports database)

Mean IF per article: **6,34**

Total Citations: **436**

(Scopus database)

Mean citations per article: **27,25**

PART X: LIST OF ALL SCIENTIFIC PUBLICATIONS (2008-2023) in peer-reviewed journals used to calculate the bibliometric indexes.

- IF (publication year) is from *Incites-JCR Journal Citation Reports* database. For papers published in 2023 the last available IF is indicated
 - Citations number is from *Scopus* database
 - All scientific publications are from *Medline (PubMed.gov)* & *Scopus* database
 - [*corresponding author]
1. Cimini FA, Tramutola A, Barchetta I, Ceccarelli V, Gangitano E, Lanzillotta S, Lanzillotta C, Cavallo MG, **Barone E*** (*Corresponding author*). Dynamic changes of BVRA protein levels occur in response to insulin: a pilot study in humans. *Int J Mol Sci* (2023), 24(8):7282.
Citations: 0 IF (2022): 5.60
 2. Pastore F, Battistoni M, Sollazzo M, Renna P, Paciello F, Li Puma DD, **Barone E**, Dagliyan O, Ripoli C, Grassi C. A bioengineering strategy to control ADAM10 activity in living cells. *Int J Mol Sci* (2023), 24(2):917.
Citations: 0 IF (2022): 5.60
 3. Tramutola A, Lanzillotta S, Aceto G, Pagnotta S, Ruffolo G, Cifelli P, Marini F, Ripoli C, Palma E, Grassi C, Di Domenico F, Perluigi M, **Barone E*** (*Corresponding author*). Intranasal administration of KYCCSRK peptide rescues brain insulin signaling activation and reduces Alzheimer's Disease-like neuropathology in a mouse model for Down syndrome. *Antioxidants* (2023), 12(1):111.
Citations: 1 IF (2022): 7.00
 4. Cimini FA, Perluigi M, Barchetta I, Cavallo MG, **Barone E*** (*Corresponding author*). Role of biliverdin reductase A in the regulation of insulin signaling in metabolic and neurodegenerative diseases: an update. *Int J Mol Sci* (2022), 16; 23(10):557.
Citations: 3 IF (2022): 5.60
 5. Vasavda C, Semenza ER, Liew J, Kothari R, Dhindsa RS, Shanmukha S, Lin A, Tokhunts R, Ricco C, Snowman AM, Albacarys L, Pastore F, Ripoli C, Grassi C, **Barone E**, Kornberg MD, Dong X, Paul BD, Snyder SH. Biliverdin reductase bridges focal adhesion kinase to Src to modulate synaptic signaling. *Science Signal* (2022), 15(733): eabh3066
Citations: 2 IF (2022): 7.30
 6. Perluigi M and **Barone E**. Aberrant protein networks in Alzheimer disease. *Nature Reviews Neurology* (2022), 18(5):255-256
Citations: 4 IF (2022): 38.10
 7. Pagnotta S, Tramutola A, **Barone E**, Di Domenico F, Pittalà V, Salerno L, Folgiero V, Caforio M, Locatelli F, Petrini S, Butterfield DA, and Perluigi M. CAPE and its synthetic derivative VP961 restore BACH1/NRF2 axis in Down Syndrome. *Free Rad Biol Med* (2022), 183:1-13
Citations: 5 IF (2022): 7.40

8. Perluigi M, Picca A, Montanari E, Calvani R, Marini F, Matassa R, Tramutola A, Villani A, Familiari G, Di Domenico F, Butterfield DA, Oh KJ, Marzetti E, Valentini D, **Barone E*** (*Corresponding author*). Aberrant Crosstalk between Insulin signaling and mTOR in young Down Syndrome Individuals Revealed by Neuronal-derived Extracellular Vesicles. *Alzheimer's & Dementia* (2022) 18:1498-1510
Citations: 6 IF (2022): 14.00

9. **Barone E**, Di Domenico F, Perluigi M and Butterfield DA. The Interplay Among Oxidative Stress, Brain Insulin Resistance and AMPK Dysfunction Contribute to Neurodegeneration in Type 2 Diabetes and Alzheimer Disease. *Free Rad Biol Med* (2021), 176:16-33
Citations: 34 IF (2021): 8.10

10. Cimini FA, Barchetta I, Zuliani I, Pagnotta S, Bertocchini L, Dule S, Zampieri M, Reale A, Baroni MG, Cavallo MG and **Barone E*** (*Corresponding author*). Biliverdin Reductase-A Protein Levels Are Reduced in Type 2 Diabetes and Are Associated with Poor Glycometabolic Control. *Life Sci* (2021), 284:119913
Citations: 7 IF (2021): 6.78

11. Dierssen M and **Barone E*** (*Corresponding author*). Editorial: Brain Insulin Resistance in Neurodevelopmental and Neurodegenerative Disorders: Mind the Gap! *Front Neurosci* (2021), 15:730378
Citations: 2 IF (2021): 5.15

12. Trombino S, Cassano R, Procopio D, Di Gioia ML and **Barone E*** (*Corresponding author*). Valorization of Tomato Waste as a Source of Carotenoids. *Molecules* (2021), 26(16): 5062
Citations: 27 IF (2021): 4.92

13. Dierssen M, Hérault Y, Helguera P, Martínez de Lagran M, Vázquez A, Christian B, Carmona-Iragui M, Wiseman F, Mobley W, Fisher EMC, Braut V, Esbensen A, Jacola LM, Potier MC, Hamlett ED, Abbeduto L, del Hoyo Soriano L, Busciglio J, Iulita MF, Crispino J, Malinge S, **Barone E**, Perluigi M, Costanzo F, Delabar JM, Bartesaghi R, Dekker AD, De Deyn P, Fortea Ormaechea J, Shaw PA, Haydar TF, Sherman SLA, Strydom AB, Bhattacharyya A. Building the Future Therapies for down Syndrome: The Third International Conference of the T21 Research Society. *Molecular Syndromology* (2021), 12:202-218
Citations: 3 IF (2021): 1.49

14. Perluigi M, Di Domenico F, **Barone E**, Butterfield DA. mTOR in Alzheimer Disease and Its Earlier Stages: Links to Oxidative Damage in the Progression of this Dementing Disorder. *Free Rad Biol Med* (2021), 169:382-396
Citations: 32 IF (2021): 8.10

15. Zuliani I, Lanzillotta C, Tramutola A, **Barone E**, Perluigi M, Rinaldo S, Paone A, Cutruzzolà F, Bellanti F, Spinelli M, Natale F, Fusco S, Grassi C, Di Domenico F. High fat diet leads to reduced protein O-GlcNAcylation and mitochondrial defects promoting the development of Alzheimer's Disease signatures. *I J Mol Sci* (2021), 22:3746
Citations: 7 IF (2021): 6.20

16. **Barone E*** (*Corresponding author*). Brain insulin resistance is an early risk factor for the development of Alzheimer's disease in Down syndrome. *Neural Reg Res* (2022), 17:333-335

Citations: 4 IF (2022): 6.10

17. Lanzillotta C, Tramutola A, Di Giacomo G, Marini F, Butterfield DA, Di Domenico F, Perluigi M, **Barone E***(*Corresponding author*). Insulin resistance, oxidative stress and mitochondrial defects in Ts65dn mice brain: a harmful synergistic path in Down syndrome. *Free Rad Biol Med* (2021), 165:152-170.

Citations: 21 IF (2021): 8.10

18. Zuliani I, Lanzillotta C, Tramutola A, Francioso A, Pagnotta S, **Barone E**, Perluigi M, Di Domenico F. The Dysregulation of OGT/OGA Cycle Mediates Tau and APP Neuropathology in Down Syndrome. *Neurotherapeutics* (2021), 18(1):340-363

Citations: 6 IF (2021): 6.08

19. Ceccarelli V, Barchetta I, Cimini FA, Bertoccini L, Chiappetta C, Capoccia D, Carletti R, Di Cristofano C, Silecchia G, Fontana M, Leonetti F, Lenzi A, Baroni M, **Barone E*** (*Corresponding author*) and Cavallo MG*. Reduced biliverdin reductase-A expression in visceral adipose tissue is associated with adipocyte dysfunction and NAFLD in human obesity. *Int J Mol Sci* (2020), 21:9091

Citations: 11 IF (2020): 5.92

20. Lanzillotta C, Greco V, Valentini D, Villani A, Folgiero V, Caforio M, Locatelli F, Pagnotta S, **Barone E**, Urbani A, Di Domenico F and Perluigi M. Proteomics Study of Peripheral Blood Mononuclear Cells in Down Syndrome Children. *Antioxidants* (2020), 9:1112

Citations: 4 IF (2020): 6.31

21. Barchetta I, Ceccarelli V, Cimini FA, **Barone E**, Sentinelli F, Coluzzi M, Chiappetta C, Bertoccini L, Tramutola T, Labbadia G, Di Cristofano C, Silecchia G, Leonetti F, Cavallo MG. Circulating dipeptidyl peptidase-4 is independently associated with the presence and severity of NAFLD/NASH in individuals with and without obesity and metabolic disease. *J Endocrinol Invest* (2021), 44:979-988

Citations: 44 IF (2021): 5.47

22. Perluigi M, Tramutola A, Pagnotta S, **Barone E** and Butterfield DA. The BACH1/Nrf2 Axis in Brain in Down Syndrome and Transition to Alzheimer Disease-Like Neuropathology and Dementia. *Antioxidants* (2020) 9:779

Citations: 16 IF (2020): 6.31

23. Lanzillotta C, Zuliani I, Tramutola A, **Barone E**, Blarzino C, Folgiero V, Caforio M, Valentini D, Villani A, Locatelli F, Butterfield DA, Head E, Perluigi M, Abisambra JF and Di Domenico F. Chronic PERK induction promotes Alzheimer-like neuropathology in Down syndrome: insights for therapeutic intervention. *Progress in Neurobiol* (2021) 196:101892

Citations: 15 IF (2021): 10.88

24. Lanzillotta C, Zuliani I, Vasavda C, Snyder SH, Paul BD, Perluigi M, Di Domenico F, **Barone E***(*Corresponding author*). BVR-A deficiency leads to autophagy impairment through the

dysregulation of AMPK/mTOR axis in the brain: implications for neurodegeneration. *Antioxidants* (2020) 9:671

Citations: 12 IF (2020): 6.31

25. Sferrazzo G, Di Rosa M, **Barone E**, Li Volti G, Musso N, Tibullo D, Barbagallo I. Heme Oxygenase-1 in Central Nervous Malignancies. *J Clin Med* (2020) 9:1562

Citations: 21 IF (2020): 4.24

26. Dierssen M, Fructuoso M, Martinez de Lagran M, Perluigi M, **Barone E*** (*Corresponding author*). Down syndrome is a metabolic disease: altered insulin signaling mediates peripheral and brain dysfunctions. *Front Neurosci* (2020) 14:670

Citations: 32 IF (2020): 4.67

27. Tramutola A, Lanzillotta C, Di Domenico F, Head E, Butterfield DA, Perluigi M, **Barone E*** (*Corresponding author*). Brain insulin resistance triggers early onset Alzheimer disease in Down Syndrome. *Neurobiol Dis* (2020) 137:104772

Citations: 39 IF (2020): 5.99

28. Barchetta I, Ciccarelli G, **Barone E**, Cimini FA, Ceccarelli V, Bertoccini L, Sentinelli F, Tramutola A, Del Ben M, Angelico F, Baroni MG, Lenzi A, Cavallo MG. Greater circulating DPP4 activity is associated with impaired flow-mediated dilatation in adults with type 2 diabetes mellitus. *Nutrition, Metabolism and Cardiovascular Diseases* (2019) 29: 1087-1094.

Citations: 13 IF (2019): 3.70

29. Di Domenico F, Tramutola A, **Barone E**, Lanzillotta C, Defever O, Arena A, Zuliani I, Foppoli C, Iavarone F, Vincenzoni F, Castagnola M, Butterfield DA and Perluigi M. Restoration of aberrant mTOR signaling by intranasal rapamycin reduces oxidative damage: focus on HNE-modified proteins in a mouse model of Down Syndrome. *Redox Biol* (2019) 23:101162.

Citations: 40 IF (2019): 9.99

30. Cimini FA, Arena A, Barchetta I, Tramutola A, Ceccarelli V, Lanzillotta C, Fontana M, Bertoccini L, Leonetti F, Capoccia D, Silecchia G, Di Cristofano G, Chiappetta C, Di Domenico F, Baroni MG, Perluigi M, Cavallo MG, **Barone E*** (*Corresponding author*). Reduced biliverdin reductase-A are associated with early alterations of insulin signalling in obesity. *BBA Mol Bas Dis* (2019) 1865: 1490-1501.

Citations: 26 IF (2019): 4.35

31. Sharma N, Tramutola A, Lanzillotta C, Arena A, Blarzino C, Cassano T, Butterfield DA, Di Domenico F, Perluigi M, **Barone E*** (*Corresponding author*). Loss of biliverdin reductase-A favors Tau hyperphosphorylation in Alzheimer's disease. *Neurobiol Dis* (2019) 125:176-189.

Citations: 40 IF (2019): 5.33

32. Tramutola A, Abate G, Lanzillotta C, Triani F, **Barone E**, Iavarone F, Vincenzoni F, Castagnola M, Marziano M, Memo M, Garrafa E, Butterfield DA, Perluigi M, Di Domenico F, Uberti D. Protein

nitration profile of CD3⁺ lymphocytes from Alzheimer disease patients: Novel hints on immunosenescence and biomarker detection. *Free Rad Biol Med* (2018) 129: 430-439.

Citations: 17 IF (2018): 5.66

33. Tramutola A, Lanzillotta C, **Barone E**, Arena A, Zuliani I, Mosca L, Blarzino C, Butterfield DA, Perluigi M, Di Domenico F. Intranasal rapamycin ameliorates Alzheimer-like cognitive decline in a mouse model of Down syndrome. *Transl Neurodegener* (2018) 7:28

Citations: 66 IF (2018): 5.53

34. Tramutola A, Triani F, Di Domenico F, **Barone E**, Cai J, Klein JB, Perluigi M, Butterfield DA. Polyubiquitin profile in Alzheimer disease brain. *Neurobiol Dis* (2018) 118:129-141.

Citations: 26 IF (2018): 5.16

35. Triani F, Tramutola A, Di Domenico F, Sharma N, Butterfield DA, Head E, Perluigi M, **Barone E*** (*Corresponding author*). Biliverdin reductase-A impairment links brain insulin resistance with increased A β production in an animal model of aging: Implications for Alzheimer disease. *BBA-Molecular Basis of Diseases* (2018) 1864: 3181-3194.

*Selected to be included in the **BBA Collection** on [Cellular Aging and Senescence](#) in 2019*

Citations: 29 IF (2018): 4.35

36. Tramutola A, Sharma N, **Barone E**, Lanzillotta C, Castellani A, Iavarone F, Vincenzoni F, Castagnola M, Butterfield DA, Cassano T, Perluigi M, Di Domenico F. Proteomic identification of altered protein O-GlcNAcylation in a triple transgenic mouse model of Alzheimer's disease. *BBA-Molecular Basis of Diseases* (2018) 1864: 3309-332.

Citations: 27 IF (2018): 4.33

37. **Barone E**, Tramutola A, Triani F, Calcagnini S, Di Domenico F, Ripoli C, Gaetani S, Grassi C, Butterfield DA, Cassano T and Perluigi M. Biliverdin reductase-A mediates the beneficial effects of intranasal insulin administration in Alzheimer disease. *Molecular Neurobiology* (2019) 56: 2922-2943.

Citations: 58 IF (2019): 4.50

38. Lanzillotta C, Tramutola A, Meier S, Schmitt F, **Barone E**, Perluigi M, Di Domenico F, Abisambra JF. Early and Selective Activation and Subsequent Alterations to the Unfolded Protein Response in Down Syndrome Mouse Models. *J Alzheimers Dis* (2018) 62:347-359.

Citations: 16 IF (2018): 3.52

39. **Barone E**, Arena A, Head E, Butterfield DA, Perluigi M. Disturbance of redox homeostasis in Down Syndrome: Role of iron dysmetabolism. *Free Rad Biol Med* (2018) 114:84-93.

Citations: 33 IF (2018): 5.66

40. **Barone E**, Head E, Butterfield DA, Perluigi M. HNE-modified proteins in Down syndrome: Involvement in development of Alzheimer disease neuropathology. *Free Rad Biol Med* (2017) 111:262-269.

Citations: 32 IF (2017): 6.02

41. Tramutola A, Arena A, Cini C, Butterfield DA, **Barone E*** (*Corresponding author*). Modulation of GLP-1 signaling as a novel therapeutic approach in the treatment of Alzheimer's disease pathology. *Expert Rev Neurother* (2017) 17: 59-75.
Citations: 24 IF (2017): 3.70
42. Tramutola A, Di Domenico F, **Barone E**, Giorgi A, Di Francesco L, Schininà E, Coccia R, Arena A, Head E, Butterfield DA, Perluigi M. Poly-Ubiquitylation Profile in Down Syndrome Brain before and after the Development of Alzheimer Neuropathology. *Antioxid Redox Signal* (2017) 26: 280-298.
Citations: 36 IF (2017): 6.53
43. Di Domenico F, **Barone E**, Perluigi M, Butterfield DA. The "Triangle of Death" in Alzheimer Disease Brain: The Aberrant Cross Talk Among Energy Metabolism, mTOR Signaling and Protein Homeostasis Revealed by Redox Proteomics. *Antioxid Redox Signal* (2017) 26: 364-387.
Citations: 87 IF (2017): 6.53
44. Perluigi M, **Barone E**, Di Domenico F, Butterfield DA. Aberrant protein phosphorylation in Alzheimer disease brain disturbs pro-survival and cell death pathways. *BBA – Molecular basis of Disease* (2016) 1862: 1871-1882.
Citations: 57 IF (2016): 5.48
45. Tramutola A, Pupo G, Di Domenico F, **Barone E**, Arena A, Lanzillotta C, Broekaart D, Blarzino C, Head E, Butterfield DA and Perluigi M. Activation of p53 in down syndrome and in the ts65dn mouse brain is associated with a pro-apoptotic phenotype. *J Alzheimer Dis* (2016) 52: 359-371.
Citations: 28 IF (2016): 3.73
46. **Barone E**, Di Domenico F, Cassano T, Arena A, Tramutola A, Lavecchia MA, Coccia R, Butterfield DA, Perluigi M. Impairment of biliverdin reductase-A promotes brain insulin resistance in Alzheimer disease: A new paradigm. *Free Rad Biol Med* (2016) 91: 127-142.
Citations: 84 IF (2016): 5.60
47. Tramutola A, Di Domenico F, **Barone E**, Perluigi M, Butterfield DA. It's all about U(biquitin): Role of the altered ubiquitin proteasome system and UCHL1 in Alzheimer disease. *Oxidative Medicine and Cellular Longevity* (2016) 2016: 2756068. doi: 10.1155/2016/2756068.
Citations: 75 IF (2016): 4.59
48. Tramutola A, Lanzillotta C, Arena A, **Barone E**, Perluigi M and Di Domenico F. Increased mammalian target of rapamycin signaling contributes to the accumulation of protein oxidative damage in a mouse model of Down syndrome. *Neurodegenerative Dis* (2016) 16: 62-68.
Citations: 33 IF (2016): 2.84
49. **Barone E*** (*Corresponding author*). Oxidative stress and Alzheimer disease: where do we stand? *Curr Alz Res* (2016) 13:108-111.
Citations: 10 IF (2016): 2.95

50. **Barone E**, Cenini G, Di Domenico F, Noel T, Wang C, Perluigi M, St Clair DK, Butterfield DA. Basal brain oxidative and nitrative stress levels are finely regulated by the interplay between superoxide dismutase 2 and p53. *J Neurosci Res* (2015) 93: 1728-1739.
Citations: 18 IF (2015): 2.69
51. **Barone E** and Butterfield DA. Insulin Resistance in Alzheimer Disease: Is Heme Oxygenase-1 an Achille's Heel? *Neurobiol Dis* (2015) 84: 69-77.
Citations: 26 IF (2015): 4.86
52. Di Domenico F, Gilda Pupo, Mancuso C, **Barone E**, Paolini F, Arena A, Blarzino C, Frederick A. Schmitt, Head E, Butterfield DA and Perluigi M. Bach1 overexpression in Down syndrome correlates with the alteration of the HO-1/BVR-A system: insights for transition to Alzheimer Disease. *J Alzheimers Dis* (2015) 44:1107-1120.
Citations: 46 IF (2015): 3.92
53. **Barone E**, Mosser S, Fraering PC. Inactivation of brain Cofilin-1 by age, Alzheimer's disease and γ -secretase. *BBA – Molecular basis of Disease* (2014) 1842: 2500-2509.
Citations: 44 IF (2014): 4.88
54. Di Domenico F†, **Barone E**†, Perluigi M, Butterfield DA. Strategy to Reduce Free Radical Species in Alzheimer Disease: An Update. *Expert Rev Neurother* (2015) 15:19-40.
†*equally contributed*
Citations: 85 IF (2015): 2.58
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