SARA PAGNOTTA

EDUCATION

PhD in Biochemistry –December 2021

Dept. of Biochemical Sciences "A. Rossi Fanelli", '*La Sapienza*' University of Rome (Italy)

National Qualification as Pharmacist – July 2018

Faculty of Pharmacy and Medicine, '*La Sapienza*' University of Rome (Italy)

Master's Degree in Pharmaceutical Chemistry and Technology (summacum laude) – January 2018

Faculty of Pharmacy and Medicine - Dept. of Chemistry and Technology of Drugs, "*La Sapienza*" University of Rome (Italy)

WORKING EXPERIENCE

Post-doctoral Researcher –May 2023 – Feb 2025

Inflammation Lab led by Miguel Soares - Gulbenkian Institute for Molecular Medicine (GIMM) – Oeiras (Lisbon), Portugal

Post-doctoral Researcher –March 2022 – March 2023

Laboratory Of Redox Biochemistry in Neuroscience (LRBN) led by Marzia Perluigi - Dept. of Biochemical Sciences "A. Rossi Fanelli", '*La Sapienza*' University of Rome(Italy)

PhD in Biochemistry – Nov 2018 –Dec 2021

Laboratory Of Redox Biochemistry in Neuroscience (LRBN) led by Marzia Perluigi - Dept. of Biochemical Sciences "A. Rossi Fanelli", '*La Sapienza*' University of Rome(Italy)

Internship at Molecular Biology laboratory - Feb 2017 – Jan 2018

Molecular Biology Laboratory led by Fabio Altieri - Dept. of Biochemical Sciences "A. Rossi Fanelli", '*La Sapienza*' University of Rome(Italy)

Pharmacy Internship – May 2016 – Feb 2017

Rome (Italy)

CERTIFICATION:

CONGENTO Course on Laboratory Animal Sciences (LAS) – May 2024

Personal license for EU Functions A+C+D to work with rodents (DGAV Direção Geral de Alimentação e Veterinária – Portugal)

TECHNICAL SKILLS

- *Cell culture*

- primary cell lines: neuronal cells, mouse embryonic fibroblast MEFs), Renal Proximal Tubular Epithelial Cells (RPTEC):
- immortalized cell lines;
- Plasmid transfection;
- Cell Death assay: live cell death using Agilent Cytation 5 (optical microscopy plate reader)

- *Protein analysis*: protein extraction, protein determination, western blot, electroluminescence technique, slot blot, redox proteomics;
- *Molecular Biology*: DNA and RNA extraction, PCR, RT-PCR;
- *Immunofluorescence assay*
- *Enzyme activity assays*
- *Working on animal model (mice)*: behavioural tests, animal handling, tissue isolation.

IT SKILLS

- Microsoft Office (European Computer Driving Licence) Biostatistics and Graphs (GraphPad Prism 10)
- Image processing (ImageLab, Fiji, Adobe Illustrator)
- Bibliography research (PubMed, Scifinder, Scopus)

SPOKEN LANGUAGES

Italian (mother tongue)
English

GRANT

Scientific Collaborator – Grant from Sapienza University of Rome 'Two years Anna Tramontano Research Project' – 2022-2023 – *'Triplication of miR802 in Down Syndrome: the genetic link between metabolic defects and dementia'* – PI Prof.ssa Marzia Perluigi

PI - Grant from Sapienza University of Rome "Progetti di Avvio alla Ricerca" (€ 2.250,00) – 2022 – *'Triplication of BACH1 impairs NRF2-mediated stress response in Down Syndrome'* – Project ID AR22218167F83933

Scientific Collaborator – Grant from Sapienza University of Rome 'Progetti di Ricerca Grandi' - 2020– *'Targeting the autophagy pathway to treat Alzheimer-related dementia in individuals with Down Syndrome'* – Project ID RG12017293E1BCF3 – PI Prof. Fabio Di

Domenico

SOCIETY MEMBERSHIP

2021 - present Member of T21 Research Society (T21RS)
2022 - present Member of the Italian Society of Biochemistry and Molecular Biology (SIB)
2022 - present Member of the European Society for Free Radical Research (SFRRE)

MEETINGS

5th International Conference of the Trisomy 21 Research Society (T21RS) – (**June 2024, Rome, Italy**)

3rd Meeting "More Than Neurons" – Poster Presentation: *CAPE ed il suo derivato sintetico VP961 modulano l'asse BACH-1/Nrf-2 nella Sindrome di Down.* (**December 2022, Torino, Italy**)

6th Meeting 'Sindrome di Down: dalla ricerca alla terapia' – Oral presentation: *CAPE ed il suo derivato sintetico VP961 modulano l'asse BACH-1/Nrf-2 nella Sindrome di Down* (**October 2022, Virtual Meeting**)

SFRR-Europe/IUBMB/FEBS Advanced Lecture Course on "Redox alterations and cellular responses: From signalling to interventions" – Poster Presentation: '*CAPE and its synthetic derivative VP961 restore BACH1/Nrf2 axis in Down Syndrome*'
(**September 2022, Spetses Island, Greece**)

61° Meeting of the Italian Society of Biochemistry and Molecular Biology (SIB) - Poster Presentation: '*Proteomics Study of Peripheral Blood Mononuclear Cells in Down Syndrome Children*'. (**September 2021, Virtual Meeting**)

Conference of the Trisomy 21 Research Society (T21RS) - Poster Presentation: '*Proteomics Study of Peripheral Blood Mononuclear Cells in Down Syndrome Children*' (*June 2021, Virtual Meeting*)

SCIENTIFIC PUBLICATIONS

1. Martins R., Blankehaus B., Braza F., Ventura P., Singh S., Weis S., Mesquita M., Pires M., **Pagnotta S.**, Wu Q., Cardoso S., Jentho E., Figueiredo A., Faisca P., Nóvoa A., V.A. Morais[1], Wculek S.K., Sancho D., Mallo M., Soares **M P.** Monocyte control of organismal energy homeostasis. 2025, *in preparation.*

2. Figueiredo A., Trikha Rastogi S.[1*], Ramos S., Nogueira F., De Villiers K., Gonçalves de Sousa A.G., Votborg-Novél L., von Wedel C., Tober-Lau P., Jentho E., **Pagnotta S.**, Mesquita M., Cardoso S., Bortolussi G., Munro A., Tranfield E.M., Thibaud J., Duarte D., Sousa A.L., Pinto S.N., Kitoko J., Mombo-Ngoma G., Mischlinger J., Junttila S., Alenquer M., Amorim M.J., Bosma P.J., Violante S., Drotleff B., Paixão T., Portugal S.,

Kurth F., Elo L.L, Paul B.D., Martins R., Soares MP. A Metabolite-Based Resistance Mechanism Against Malaria. Science, 2024. *Under revision*

3. Lanzillotta C, Tramutola A, Lanzillotta S., Greco V., **Pagnotta S.**, Sanchini C., Di Angelantonio S., Forte E., Rinaldo S., Paone A., Cutruzzolà F., Cimini F.A., Barchetta I., Cavallo M.G., Urbani A., Butterfield D.A., Di Domenico F., Paul B.D., Perluigi M., Duarte J.M.N., Barone E. Biliverdin Reductase-A integrates insulin signaling with mitochondrial metabolism through phosphorylation of GSK3β. Redox biology, 2024. PMID 38843768
   Impact Factor: 10,7 Citations Scopus: 5

4. Tramutola A., Bakels H. S., Perrone F., Di Nottia M., Mazza T., Abruzzese MP., Zoccola M., **Pagnotta S.**, Carrozzo R., T de Bot S., Perluigi M., van Roon-Mom WMC., Squitieri F. GLUT-1 changes in paediatric Huntington disease brain cortex and fibroblasts: an observational case-control study. eBioMedicine, 2023. PMID 37898095
   Impact Factor: 9,7 Citations Scopus: 8

5. 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. 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. PMID 36670973
   Impact Factor: 6,0 Citations Scopus: 15

6. **Pagnotta S**., Tramutola A., Barone E., Di Domenico F., Pittalà V., Salerno L., Folgiero V., Caforio M., Locatelli F., Petrini S., Allan Butterfield D., Perluigi M. CAPE and its synthetic derivative VP961 restore BACH1/NRF2 axis in Down Syndrome. Free Radical Biology and Medicine, 2022. PMID 35283228
   Impact Factor: 7,1 Citations Scopus: 17

7. Cimini F.A., Barchetta I., Zuliani I., **Pagnotta S.**, Bertoccini L., Dule S., Zampieri M., Reale A., Baroni M.G., Cavallo M.G., Barone E. Biliverdin reductase-A protein levels are reduced in type 2 diabetes and are associated with poor glycometabolic control. Life Sciences, 2021. PMID 34453944
   Impact Factor: 5,2 Citations Scopus: 9

8. 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. PMID 33258073
   Impact Factor: 5,6 Citations Scopus: 14

9. Lanzillotta C., Greco V. Valentini D., Villani A., Folgiero V., Caforio M., Locatelli F., **Pagnotta S.**, Barone E., Urbani A., Di Domenico F., Perluigi M. Proteomics study of peripheral blood mononuclear cells in down syndrome children. Antioxidants, 2020. PMID 33187268.
   Impact Factor: 6,0 Citations Scopus: 6

10. Perluigi M., Tramutola A., **Pagnotta S**., Barone E., Allan Butterfield D. The bach1/Nrf2 axis in brain in down syndrome and transition to Alzheimer disease-like

neuropathology and dementia. Antioxidants, 2020. PMID 32839417
Impact Factor: 6,0 Citations: Scopus: 30

I authorize to the use of my personal data according to the law (D.Lgs. 196 of June 30th 2003)