PERSONAL INFORMATION

Chiara Lanzillotta *Pharm.D., Ph.D.*

Department of Biochemical Sciences "A. Rossi Fanelli"
Sapienza University of Rome
Piazzale Aldo Moro 5, 00185, Rome, Italy

N/A

WORK EXPERIENCE

From September 2023 – to August 2024	Post-doctoral Researcher Department of Biochemical Sciences "A. Rossi Fanelli" Sapienza University of Rome. Rome, Italy.
From September 2022 – to September 2023	Post-doctoral Researcher BE FOR ERC Department of Biochemical Sciences "A. Rossi Fanelli" Sapienza University of Rome Rome, Italy
From February 2018 – to February 2022	Post-doctoral Researcher Department of Biochemical Sciences "A. Rossi Fanelli" Sapienza University of Rome Rome, Italy
From May 2016 – to June 2017	Research Scholar (a) Department of Molecular and Biomedical Pharmacology in the Sanders-Brown Center on Aging and (b) Department of Chemistry, Laboratory of Neurochemistry University of Kentucky, Lexington, Kentucky, USA
From November 2014 – to November 2017	Ph.D. Candidate in Biochemistry Department of Biochemical Sciences "A. Rossi Fanelli" Sapienza University of Rome Rome, Italy

From February 2013 – to July 2014 — Visiting Student
Department of Biochemical Sciences "A. Rossi Fanelli" Sapienza University of Rome
Rome, Italy

From May 2012 – to November 2013 — Pharmacy Training
Pharmacy
Frascati (RM), Italy

EDUCATION AND TRAINING

February 2018 — Post-doctoral Researcher
Department of Biochemical Sciences "A. Rossi-Fanelli" Sapienza University of Rome, Italy

December 2017 — Ph.D. in Biochemistry
Department of Biochemical Sciences "A. Rossi-Fanelli" Sapienza University of Rome, Italy

December 2014 — National Qualification as Pharmacist
Faculty of Pharmacy, Sapienza University of Rome, Italy

July 2014 — Doctor in Pharmaceutical Chemistry and Technology
Faculty of Pharmacy, Sapienza University of Rome, Italy

2007 — Secondary School Diploma
Liceo Scientifico "Bruno Touschek" – Grottaferrata (RM) Italia

PERSONAL SKILLS

Mother tongue: Italian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

HONORS AND AWARDS

September 2021	PREMIO ANGELETTI-MORTARI PER LA RICERCA SCIENTIFICA NELL'AMBITO DELLE LIFE SCIENCES
June 2019	T21RS Young Investigator Travel Awards (2019) assegnato da T21RS per International Conference of the Trisomy 21 Research Society 6-9 Giugno 2019 Barcellona
January 2017	BANDO MOBILITA' DOTTORANDI N. 4389/2016, Sapienza University of Rome International Office - Research Unit, Italia
November 2016	SIB Fellowship 'Società Italiana di Biochimica e Biologia Molecolare' 1000 Euro

PROFESSIONAL MEMBERSHIPS

2017-present members of T21RS

2014-present Italian Society of Biochemistry (SIB)

2018-present ESN membership

INVITED SPEAKER

2023: 17th International Conference on Alzheimer's and Parkinson's Diseases ADPD™ 2023 March 28-April 1, 2023 in Gothenburg, Sweden. The pharmacological increase of protein O-Glcnacylation rescue Alzheimer signatures in Down syndrome mice: A proteomics analysis of molecular target.

2021:T21 research society virtual conference 2021. June 8-10, 2021.Aberrant protein O-GlcNAcylation ties metabolic alterations with the development of AD hallmarks in Down Syndrome.

2021:5th Conference Sindrome di Down dalla diagnosi alla terapia. Virtual edition. 15-16 Ottobre 2021. La O- gliconacilazione proteica rappresenta un efficace target farmacologico per il recupero delle alterazioni neuronali associate allo sviluppo della malattia di Alzheimer in soggetti con sindrome di Down.

2021: 15th International Conference on Alzheimer's and Parkinson's Diseases ADPDTM 2021. March 9- March 14, 2021. Virtual Conference. Oxidative stress links brain Insulin resistance and mitochondrial defects in Down syndrome brain early in life: implication for neurodegeneration.

2020: 4th Conference Sindrome di Down dalla diagnosi alla terapia. Virtual edition. 16-17 Ottobre 2020 Analisi del profilo proteomico in cellule mononucleate periferiche nella sindrome di Down: una finestra di osservazione verso il danno cerebrale

2019: 3th Conference Sindrome di Down dalla diagnosi alla terapia 18-19 Ottobre 2019 Napoli. Alterazioni dell'omeostasi proteica nella T21.

2017:13th International Conference on Alzheimer's and Parkinson's Diseases ADPD™ 2017 March 29-April 2, 2017 in Vienna, Austria. The Unfolded Protein Response: a major early participant in the development of Alzheimer–like neuropathology in Down syndrome mice

2015: 58° National Meeting of the Italian Society of Biochemistry and Molecular Biology (September 2015, Urbino, Italy). "Ubiquitin-bound protein profile in human brain from Down Syndrome individuals' prior and after the development of Alzheimer-like dementia"

PROFESSIONAL EXPERTISE

Surgery and Tissue Processing: High experience with Small Animal Surgery, Brain dissection
Microscopy: Histochemistry, Immunohistochemistry, BrdU, Immunofluorescence

Behavioural Training: Radial maze test, novel object

Cell culture: Primary Neurons
Cell Lines (M17, iHEK, SHSY5, C33A, HeLa, SiHa)

Molecular Biology: DNA extraction, RT-PCR, Real Time PCR, Western Blot analysis, Proteomics and Redox Proteomics
Other Methods: ELISA, Reactive oxygen species assays.

SCIENTIFIC COLLABORATIONS

- Prof. Jose F. Abisambra, College of Medicine Department of Neuroscier Center for Translational Research in Neurodegenerative Diseases Gainesvi FLORIDA (USA)

- Joao Duarte Lund University (Sweden)

- Prof. D. Allan Butterfield- Department of Chemistry and Sanders-Brown Center on Aging, University of Kentucky, Lexington, KY, 40506-0055, USA

PUBLICATIONS LIST

Pubblicazioni:

[1] Cosentino L1†, Urbinati C1† , **Lanzillotta C**, De Rasmo D, Valenti D, Pellas M, Quattrini M C , Piscitelli F, Kostrzewa M, Di Domenico F, Pietraforte D, Bisogno T, Signorile A, Vacca RA, De Filippis B. Pharmacological inhibition of the CB1 cannabinoid receptor restores abnormal brain mitochondrial CB1 receptor expression and rescues bioenergetic and cognitive defects in a female mouse model of Rett syndrome. Molecular Autism
Citations= 0; Impact factor (2024) = 6.0

[2] **Lanzillotta C**, Tramutola A, Lanzillotta S, Greco V, Pagnotta S, Sanchini C, Di Angelantonio S, Forte E, Rinaldo S, Paone A, Cutruzzolà F, Cimini FA, Barchetta I, Cavallo MG, Urbani A, Butterfield DA, Di Domenico F, Paul BD, Perluigi M, Duarte JMN, Barone E. Biliverdin Reductase-A integrates insulin signaling with mitochondrial metabolism through phosphorylation of GSK3β. Redox Biol. 2024 Jul;73:103221. doi: 10.1016/j.redox.2024.103221. Epub 2024 Jun 1. PMID: 38843768; PMCID: PMC11190564.
Citations= 0; Impact factor (2024) = 10.7

[3] **Lanzillotta C**, Baniowska MR, Prestia F, Sette C, Nalesso V, Perluigi M, Barone E, Duchon A, Tramutola A, Herault Y, Di Domenico F. Shaping down syndrome brain cognitive and molecular changes due to aging using adult animals from the Ts66Yah murine model. Neurobiol Dis. 2024 Jun 15;196:106523. doi: 10.1016/j.nbd.2024.106523. Epub 2024 May 4. PMID: 38705491.
Citations= 0; Impact factor (2024) = 5.1

[4] Di Domenico F, **Lanzillotta C**, Perluigi M. Redox imbalance and metabolic defects in the context of Alzheimer disease. FEBS Lett. 2024 Mar 12. doi: 10.1002/1873-3468.14840. Epub ahead of print. PMID: 38472147.
Citations= 0; Impact factor (2024) = 3.5

[5] Cimini FA, Tramutola A, Barchetta I, Ceccarelli V, Gangitano E, Lanzillotta S, **Lanzillotta C**, Cavallo MG, Barone E. Dynamic Changes of BVRA Protein Levels Occur in Response to Insulin: A Pilot Study in Humans. Int J Mol Sci. 2023 Apr 14;24(8):7282. doi: 10.3390/ijms24087282. PMID: 37108445; PMCID: PMC10138944.
Citations= 2; Impact factor (2023) = 6.20

[6] Urbinati C, **Lanzillotta C**, Cosentino L, Valenti D, Quattrini MC, Di Crescenzo L, Prestia F, Pietraforte D, Perluigi M, Di Domenico F, Vacca RA, De Filippis B. Chronic treatment with the anti-diabetic drug metformin rescues impaired brain mitochondrial activity and selectively ameliorates defective cognitive flexibility in a female mouse

model of Rett syndrome. Neuropharmacology. 2023 Feb 15;224:109350. doi: 10.1016/j.neuropharm.2022.109350. Epub 2022 Nov 25. PMID: 36442649.
Citations= 3; Impact factor (2022) = 5.20

[7] Di Domenico F, **Lanzillotta C**. The disturbance of protein synthesis/degradation homeostasis is a common trait of age-related neurodegenerative disorders. Adv Protein Chem Struct Biol. 2022;132:49-87. doi: 10.1016/bs.apcsb.2022.05.008. Epub 2022 Jun 9. PMID: 36088079.
Citations= 9; Impact factor (2022) = 5.4

[8] 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. Int J Mol Sci. 2021 Apr 3;22(7):3746. doi: 10.3390/ijms22073746. PMID: 33916835; PMCID: PMC8038495.

Citations= 19 Impact factor (2021) = 6.2

[9] **Lanzillotta C**, Di Domenico F. Stress Responses in Down Syndrome Neurodegeneration: State of the Art and Therapeutic Molecules. Biomolecules. 2021 Feb 11;11(2):266. doi: 10.3390/biom11020266. PMID: 33670211; PMCID: PMC7916967.
Citations= 18; Impact factor (2021) = 4.20

[10] Koren SA, Hamm MJ, Cloyd R, Fontaine SN, Chishti E, **Lanzillotta C**, Rodriguez-Rivera J, Ingram A, Bell M, Galvis-Escobar SM, Zulia N, Di Domenico F, Duong D, Seyfried NT, Powell D, Vandsburger M, Frolinger T, Hartz AMS, Koren J 3rd, Axten JM, Laping NJ, Abisambra JF. Broad Kinase Inhibition Mitigates Early Neuronal Dysfunction in Tauopathy. Int J Mol Sci. 2021 Jan 26;22(3):1186. doi: 10.3390/ijms22031186. PMID: 33530349; PMCID: PMC7865413.
Citations= 5; Impact factor (2022) = 6.21

[11] **Lanzillotta C**, Tramutola A, Di Giacomo G, Marini F, Butterfield DA, Di Domenico F, Perluigi M, Barone E. Insulin resistance, oxidative stress and mitochondrial defects in Ts65dn mice brain: A harmful synergistic path in down syndrome. Free Radic Biol Med. 2021 Mar;165:152-170. doi: 10.1016/j.freeradbiomed.2021.01.042. Epub 2021 Jan 29. PMID: 33516914
Citations= 29 Impact factor (2021) = 8.1

[12] 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 Jan;18(1):340-363. doi: 10.1007/s13311-020-00978-4. Epub 2020 Nov 30. PMID: 33258073; PMCID: PMC8116370.
Citations= 11 Impact factor (2020) = 6.08

[13] Bouzidi A, Magnifico MC, Paiardini A, Macone A, Boumis G, Giardina G, Rinaldo S, Liberati FR, Lauro C, Limatola C, **Lanzillotta C**, Tramutola A, Perluigi M, Sgarbi G, Solaini G, Baracca A, Paone A, Cutruzzolà F. Cytosolic serine hydroxymethyltransferase controls lung adenocarcinoma cells migratory ability by modulating AMP kinase activity. Cell Death Dis. 2020 Nov 26;11(11):1012. doi: 10.1038/s41419-020-03215-0. PMID: 33243973; PMCID: PMC7691363.
Citations= 10; Impact factor (2020) = 8.4

[14] **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 (Basel). 2020 Nov 11;9(11):1112. doi: 10.3390/antiox9111112. PMID: 33187268; PMCID: PMC7696178.
Citations= 5 Impact factor (2020) = 5.95

[15] **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, Di Domenico F. Chronic PERK induction promotes Alzheimer-like neuropathology in Down syndrome: Insights for therapeutic intervention. Prog Neurobiol. 2021 Jan;196:101892. doi: 10.1016/j.pneurobio.2020.101892. Epub 2020 Aug 11. PMID: 32795489.
Citations= 24 Impact factor (2021) = 11.68

[16] **Lanzillotta C**, Zuliani I, Vasavda C, Snyder SH, Paul BD, Perluigi M, Di Domenico F, Barone E. BVR-A Deficiency Leads to Autophagy Impairment through the Dysregulation of AMPK/mTOR Axis in the Brain-Implications for Neurodegeneration. Antioxidants (Basel). 2020 Jul 27;9(8):671. doi: 10.3390/antiox9080671. PMID: 32727065; PMCID: PMC7466043.
Citations= 18 Impact factor (2020) = 5.95

[17] Tramutola A, **Lanzillotta C**, Di Domenico F, Head E, Butterfield DA, Perluigi M, Barone E. Brain insulin resistance triggers early onset Alzheimer disease in Down syndrome. Neurobiol Dis. 2020 Apr;137:104772. doi:10.1016/j.nbd.2020.104772. Epub 2020 Jan 24. PMID: 31987911. **Citations= 50 Impact factor (2020) = 5.99**

[18] Tramutola A, Falcucci S, Brocco U, Triani F, **Lanzillotta C**, Donati M, Panetta C, Luzi F, Iavarone F, Vincenzoni F, Castagnola M, Perluigi M, Di Domenico F, Marco F. Protein Oxidative Damage in UV-Related Skin Cancer and Dysplastic Lesions Contributes to Neoplastic Promotion and Progression. Cancers (Basel). 2020 Jan 1;12(1):110. doi: 10.3390/cancers12010110. PMID: 31906275; PMCID: PMC7017152.

Citations= 8; Impact factor (2020) = 5.32

[19] **Lanzillotta C**, Di Domenico F, Perluigi M, Butterfield DA. Targeting Mitochondria in Alzheimer Disease: Rationale and Perspectives. CNS Drugs. 2019 Oct;33(10):957-969. doi: 10.1007/s40263-019-00658-8. PMID: 31410665; PMCID: PMC6825561.
Citations= 44; Impact factor (2019) = 4.79

[20] 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, 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 May;23:101162. doi: 10.1016/j.redox.2019.101162. Epub 2019 Mar 9. PMID: 30876754; PMCID: PMC6859577. **Citations= 50; Impact factor (2019) = 10.20**

[21] Cimini FA, Arena A, Barchetta I, Tramutola A, Ceccarelli V, **Lanzillotta C**, Fontana M, Bertoccini L, Leonetti F, Capoccia D, Silecchia G, Di Cristofano C, Chiappetta C, Di Domenico F, Baroni MG, Perluigi M, Cavallo MG, Barone E. Reduced biliverdin reductase-A levels are associated with early alterations of insulin signaling in obesity. Biochim Biophys Acta Mol Basis Dis. 2019 Jun 1;1865(6):1490-1501. doi: 10.1016/j.bbadis.2019.02.021. Epub 2019 Feb 28. PMID: 30826467.
Citations= 30; Impact factor (2019) = 4.35

[22] Sharma N, Tramutola A, **Lanzillotta C**, Arena A, Blarzino C, Cassano T, Butterfield DA, Di Domenico F, Perluigi M, Barone E. Loss of biliverdin reductase-A favors Tau hyper-phosphorylation in Alzheimer's disease. Neurobiol Dis. 2019 May;125:176-189. doi: 10.1016/j.nbd.2019.02.003. Epub 2019 Feb 6. PMID: 30738142.
Citations= 44; Impact factor (2019) = 5.33

[23] 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 Nov 6;7:28. doi: 10.1186/s40035-018-0133-9. PMID: 30410750; PMCID: PMC6218962.
Citations= 48; Impact factor (2018) = 5.86

[24] Di Domenico F, **Lanzillotta C**, Tramutola A. Therapeutic potential of rescuing protein O-GlcNAcylation in tau-related pathologies. Expert Rev Neurother. 2019 Jan;19(1):1-3. doi: 10.1080/14737175.2019.1540932. Epub 2018 Oct 30. PMID: 30354776.
Citations= 13; Impact factor (2019) = 3.74

[25] 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 Radic Biol Med. 2018 Dec;129:430-439. doi: 10.1016/j.freeradbiomed.2018.10.414. Epub 2018 Oct 12. PMID: 30321702. **Citations= 21; Impact factor (2018) = 5.66**

[26] Tramutola A, Sharma N, Barone E, **Lanzillotta C**, Castellani A, Iavarone F, Vincenzoni F, Castagnola M, Butterfield DA, Gaetani S, Cassano T, Perluigi M, Di

Domenico F. Proteomic identification of altered protein O-GlcNAcylation in a triple transgenic mouse model of Alzheimer's disease. Biochim Biophys Acta Mol Basis Dis. 2018 Oct;1864(10):3309-3321. doi: 10.1016/j.bbadis.2018.07.017. Epub 2018 Jul 18. PMID: 30031227.
Citations= 32; Impact factor (2018) = 4.33

[27] **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(1):347-359. doi: 10.3233/JAD-170617. PMID: 29439332; PMCID: PMC5988365.
Citations= 18 Impact factor (2018) = 3.52

[28] Fontaine SN, Ingram A, Cloyd RA, Meier SE, Miller E, Lyons D, Nation GK, Mechas E, Weiss B, **Lanzillotta C**, Di Domenico F, Schmitt F, Powell DK, Vandsburger M, Abisambra JF. Identification of changes in neuronal function as a consequence of aging and tauopathic neurodegeneration using a novel and sensitive magnetic resonance imaging approach. Neurobiol Aging. 2017 Aug;56:78-86. doi: 10.1016/j.neurobiolaging.2017.04.007. Epub 2017 Apr 18. PMID: 28500878; PMCID: PMC5524451.
Citations= 20; Impact factor (2017) = 4.55

[29] Tramutola A, **Lanzillotta C**, Di Domenico F. Targeting mTOR to reduce Alzheimer-related cognitive decline: from current hits to future therapies. Expert Rev Neurother. 2017 Jan;17(1):33-45. doi: 10.1080/14737175.2017.1244482. Epub 2016 Oct 14. PMID: 27690737.
Citations= 55; Impact factor (2017) = 3.70

[30] Tramutola A, **Lanzillotta C**, Perluigi M, Butterfield DA. Oxidative stress, protein modification and Alzheimer disease. Brain Res Bull. 2017 Jul;133:88-96. doi: 10.1016/j.brainresbull.2016.06.005. Epub 2016 Jun 15. PMID: 27316747.
Citations= 215; Impact factor (2017) = 3.44

[31] Tramutola A, Pupo G, Di Domenico F, Barone E, Arena A, **Lanzillotta C**, Brokeaart D, Blarzino C, Head E, Butterfield DA, Perluigi M. Activation of p53 in Down Syndrome and in the Ts65Dn Mouse Brain is Associated with a Pro- Apoptotic Phenotype. J Alzheimers Dis. 2016;52(1):359-371. doi: 10.3233/JAD-151105. PMID: 26967221; PMCID: PMC4968087.
Citations= 30; Impact factor (2016) = 3.73

[32] Tramutola A, **Lanzillotta C**, Arena A, Barone E, Perluigi M, Di Domenico F. Increased Mammalian Target of Rapamycin Signaling Contributes to the Accumulation of Protein Oxidative Damage in a Mouse Model of Down's Syndrome. Neurodegener Dis. 2016;16(1-2):62-8. doi: 10.1159/000441419. Epub 2015 Nov 26. PMID: 26606243.

Citations= 35; Impact factor (2016) = 2.84