

Chiara Lanzillotta Pharm.D., Ph.D.

Name: Chiara Lanzillotta

Spoken Languages: Italian (*mother tongue*), English (*high level in writing and speaking*)

EDUCATIONAL BACKGROUND:

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, University of Rome La Sapienza)

July 2014: Doctor in Pharmaceutical Chemistry and Technology, "Sapienza" University – Rome (Italy)

2002 – 2007: Secondary School Diploma, Liceo Scientifico "Bruno Tauschek" – Grottaferrata (RM) Italia

APPOINTMENTS:

Academic appointments

September 2022- present: Post-doctoral Research: Department of Biochemical Sciences "A. Rossi-Fanelli" Sapienza University of Rome, Italy BE FOR ERC

April 2021- August 2022: Post-doctoral Research: Department of Biochemical Sciences "A. Rossi-Fanelli" Sapienza University of Rome, Italy

March 2020- February 2021: Post-doctoral Research: Department of Biochemical Sciences "A. Rossi-Fanelli" Sapienza University of Rome, Italy

March 2019- February 2020: Post-doctoral Research: Department of Biochemical Sciences "A. Rossi-Fanelli" Sapienza University of Rome, Italy

February 2018- February 2019: Post-doctoral Research: Department of Biochemical Sciences "A. Rossi-Fanelli" Sapienza University of Rome, Italy

Other appointments

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

May 2016 – June 2017: Sanders-Brown Center on Aging- Lexington (KY) - USA Laboratory of Prof. Jose F. Abisambra, working on "ER stress and Neurodegeneration"

Jan 2013 - July 2014: Dept. of Biochemistry, "Sapienza" University – Rome (Italy)

25_Tramutola A, **Lanzillotta C**, Perluigi M, Butterfield DA. Oxidative stress, protein modification and Alzheimer disease. Brain Res Bull. 2016 Jun 15. Review. PubMed PMID: 27316747.

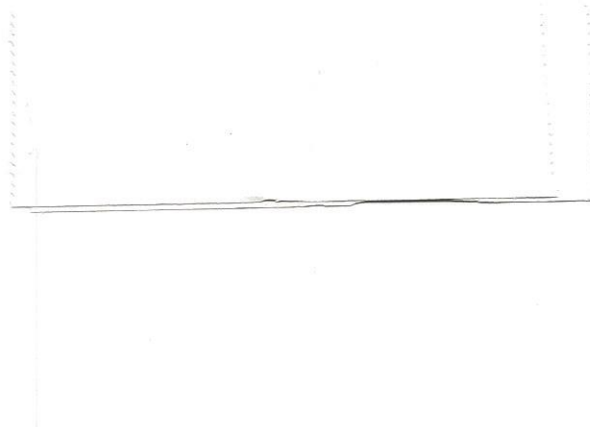
26_Tramutola A, Pupo G, Di Domenico F, Barone E, Arena A, **Lanzillotta C**, Broekaart D, Blarzino C, Head E, Butterfield DA, Perluigi M. Activation of p53 in Down Syndrome and in the Ts65Dn Mouse Brain is Associated with a Pro-Apoptotic Phenotype. J Alzheimers Dis 2016;52(1):359-71. PubMed PMID: 26967221

27_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. PMID: 26606243

Luogo e data

Roma 18/01/2023

IL/LA DICHIARANTE



Internship in Pharmaceutical Technologies, laboratory of Prof. Fabio Di Domenico “*Alterations of proteins degradative systems: implication in the development of Alzheimer like dementia*”

HONORS AWARDS:

2021 Premio Angeletti Mortari per la ricerca scientifica nell' ambito delle life

2019 Travel award 3rd International Conference Trisomy 21 Research Society Barcelona 2

2017 Travel Grant Sapienza for study abroad.

2016 Travel Grant Italian Society of Biochemistry (SIB)

INVITED SPEAKER:

- *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

- *15th International Conference on Alzheimer's and Parkinson's Diseases ADPDTM 2021. March 9-March 14, 2021. Virtual Conference (COVID 19).* Oxidative stress links brain Insulin resistance and mitochondrial defects in Down syndrome brain early in life: implication for neurodegeneration

- *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

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

- *13th International Conference on Alzheimer's and Parkinson's Diseases ADPDTM 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

- *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”

2014-2022: number of selected abstracts: 55

FUNDING INFORMATION: [grants as PI-principal investigator or I-investigator]

2021: BE FOR ERC 2021

2021: PI Progetto avvio alla ricerca n pr: AR22117A66BB18E5

2020: PI Progetto avvio alla ricerca n pr: AR220172B7BE9204

2019: PI Progetto avvio alla ricerca n pr: AR21916B89434AE5

2017: I Progetto grande Sapienza n pr: RG11715C773A333E

2016: I Progetto grande Sapienza n pr: RG116154C9214DIA

2016: Intranasal Rapamycin administration to prevent Alzheimer like dementia in DS model.
I, Jerome Lejeune Foundation

2015: I progetto piccolo Sapienza n pr: C26A154KH7

SCIENTIFIC COLLABORATIONS:

Prof. Jose F. Abisambra, Department of Neuroscience Center for Translational Research in Neurodegenerative Disease, Gainesville, FL (USA)

SOCIETY MEMBERSHIP:

2017-present members of T21RS

2014-present Italian Society of Biochemistry (SIB)

RESEARCH ACTIVITIES:

Keywords

Oxidative stress, Neurodegenerative disease, Redox proteomics Autophagy in AD and Down Syndrome, Tauopathies and Unfolded Protein Response

Chiara Lanzillotta LIST OF PUBLICATIONS (n=27)

h- index 15 (i10 index= 19)

Total citations: 676 Citations by 510 documents

1_ Urbinati C, **C. Lanzillotta**, 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. Pubmed PMID: [36442649](https://pubmed.ncbi.nlm.nih.gov/36442649/)

2_ **C. Lanzillotta**, F. Di Domenico. The disturbance of protein synthesis/degradation homeostasis is a common trait of age-related neurodegenerative disorders. *Advances in Protein Chemistry and Structural Biology* 2022. Pubmed PMID: [36088079](https://pubmed.ncbi.nlm.nih.gov/36088079/)

3_ I. Zuliani, **C. Lanzillotta**, A. Tramutola, E. Barone, M. Perluigi, S. Rinaldo, A Paone, F Cutruzzulà, F Bellanti, M Spinelli, F Natale, S Fusco F. Di Domenico. High-fat diet leads to reduced protein o-glucosylation and mitochondrial defects promoting the development of alzheimer's disease signatures. *Int J Mol Sci.* 2021. Pubmed PMID: [33916835](https://pubmed.ncbi.nlm.nih.gov/33916835/)

4_ **C. Lanzillotta**, F. Di Domenico, Stress responses in Down syndrome neurodegeneration: state of the art and therapeutic molecules, *Biomolecules* 11(2), 266 (2021). Pubmed PMID: [33670211](https://pubmed.ncbi.nlm.nih.gov/33670211/)

5_ 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. *International Journal of Molecular sciences*. Pubmed PMID: [33530349](#)

6_ **Lanzillotta C**, Tramutola A, Di Giacomo G, Butterfield DA, Di Domenico F, Perluigi M, Barone E. Insulin resistance, oxidative stress and mitochondrial defects in Ts65dn mice brain: a harmful synergistic path to neurodegeneration in Down syndrome. *Free Radic Biol Med*. 2020 Pubmed PMID: 33516914

7_ 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 APPNeuropathology in Down Syndrome. *Neurotherapeutics* <https://doi.org/10.1007/s13311-020-00978-4>. Pubmed PMID: [33258073](#)

8_ 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, Cutruzzola 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](#)

9_ **Lanzillotta C**, Greco V, Valentini D, Villani A, Folgiero V, Caforio M, Locatelli F, Pagnotta S, Barone E, Urbani A, Di Domanico F, Perluigi M. Proteomics Study of Peripheral Blood Mononuclear Cells in Down Syndrome Children. *Antioxidants (Basel)* 2020 Nov 11;9(11):1112. Pubmed PMID: [33187268](#)

10_ **Lanzillotta C**, Zuliani I, Tramutola A, Barone E, Blarzino C, Folgiero V, Caforio M, Valentini D, Villani A, Locatelli F, D. Butterfield DA, Elizabeth Head, Perluigi M, Abisambra JF, Di Domenico F. Chronic PERK induction promotes Alzheimer-like neuropathology in Down syndrome: insights for therapeutic intervention. *Prog Neurobiol*. 2020 Aug 11:101892. Online ahead of print. Pubmed PMID: [32795489](#)

11_ **Lanzillotta C.**, Zuliani I., Vasavda C., Paul B.D., Snyder S.H., Perluigi M., Di Domenico F. and 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):E671. Pubmed PMID: [32727065](#)

12_ Tramutola A, **Lanzillotta C**, Di Domenico F, Elizabeth Head; Butterfield DA; Perluigi M, Barone E. *Brain Insulin Resistance Triggers Early Onset Alzheimer Disease in Down Syndrome*. *Neurobiol Dis*. 2020 Apr;137:104772. Pubmed PMID: [31987911](#)

13_ 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, De 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. Pubmed PMID: [31906275](#)

14_ **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. Pubmed PMID: [31410665](#)

- 15_** Di Domenico F, Tramutola A, Barone E, **Lanzillotta C**, Defever O, Arena A, Zuliani I, Foppoli C, Iavarone F, Vincenzoni F, Castagnola M, D. Butterfield DA, Perluigi M. Redox Biology. 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. Pubmed PMID: [30876754](#)
- 16_** Cimini FA, Arena A, Barchetta I, Tramutola A, Ceccarelli V, **Lanzillotta C**, Fontana M, Bertocchini 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. Pubmed PMID: [30826467](#)
- 17_** Sharma N, Tramutola A, **Lanzillotta C**, Arena A, Blarzino C, Cassano T, D. Butterfield DA, Di Domenico F, Perluigi M, Barone E. Loss of biliverdin reductase-A limits the oxidative stress-induced Akt-mediated inhibition of GSK-3 β : implications for Alzheimer disease. Neurobiol Dis. 2019 May;125:176-189. Pubmed PMID: [30738142](#)
- 18_** Tramutola A*, **Lanzillotta C***, Barone E, Arena A, Zuliani I, Mosca L, Blarzino C, Butterfield DA, Perluigi M and Di Domenico F. Intranasal rapamycin ameliorates cognitive decline in a mouse model of Down syndrome. Transl Neurodegener. 2018 Nov 6;7:28. PubMed PMID: [30410750](#)
- 19_** 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. PubMed PMID: [30354776](#)
- 20_** 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. PubMed PMID: [30321702](#)
- 21_** 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. Biochim Biophys Acta Mol Basis Dis. 2018 Oct;1864(10):3309-3321. PubMed PMID: [30031227](#)
- 22_** **Lanzillotta C**, Tramutola A, Meier SE, 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. PubMed PMID: [29439332](#)
- 23_** 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 auopathic neurodegeneration using a novel and sensitive magnetic resonance imaging approach. Neurobiol Aging 2017 Aug;56:78-86. PubMed PMID: [28500878](#)
- 24_** Tramutola A, **Lanzillotta C**, Di Domenico F. Targeting mTOR to reduce Alzheimer-related cognitive decline: from current hits to future therapies. Expert Rev Neurother. 2016 Oct 2. PubMed PMID: [2769073](#).