

CURRICULUM VITAE

PERSONAL INFORMATION

Name **ANDREA ARENA**

RESEARCH AND WORK EXPERIENCE

Date (from – to)	From September 2019 – Present
Employer	Dep. Experimental Medicine, Sapienza University of Rome – Italy.
Occupation or position held	Post-doctoral fellows
Subject	Tuning autophagy to prevent or treat gammaherpesvirus-associated cancers.
Date (from – to)	From July 2019 – August 2019
Employer	Bambino Gesù Children's Hospital, IRCCS, Rome – Italy
Occupation or position held	Post-doctoral fellows
Subject	Use of antisense oligonucleotides (siRNA) vehicled by cationic liposomes to enable efficient knockdown of PTPN22 gene in human T lymphocytes.
Date (from – to)	September 2018 – June 2019
Employer	Institute of Neurological Sciences, National Research Council, ISN-CNR, Catania – Italy
Occupation or position held	Post-doctoral fellows
Subject	Homer-mGlu5 scaffold as common abnormal mechanism and therapeutic target for Intellectual Disability (ID) and Autism Spectrum Disorders (ASD).
Date (from – to)	September 2017 - August 2018
Employer	Dep. Biochemical Sciences “A. Rossi Fanelli”, Sapienza University of Rome – Italy
Occupation or position held	Post-doctoral fellows
Subject	mTor activation within neural-derived, plasma-resident exosomes can predict cognitive decline in Down syndrome.

Date (from – to)	February 2017 - Jul 2017
Employer	Dep. (Neuro) Pathology, Academisch Medisch Centrum, Amsterdam – The Netherlands
Occupation or position held	Post-doctoral fellows
Subject	Homer-mGlu5 scaffold as common abnormal mechanism and therapeutic target for Intellectual Disability (ID) and Autism Spectrum Disorders (ASD).
Date (from – to)	November 2013 - October 2016
Employer	Dep. Biochemical Sciences A. Rossi Fanelli Sapienza University of Rome - Italy
Occupation or position held	PhD Student in Biochemistry
Subject	Crosstalk between oxidative stress and inflammation in Alzheimer-like dementia.
Date (from – to)	December 2011 to November 2012
Employer	BAXTER S.p.A., Rome – Italy
Occupation or position held	Pharmaceutical Regulatory Affairs Associate
Date (from – to)	June 2010 - October 2011
Employer	Dept. of Human Physiology and Pharmacology “V. Erspamer”, Sapienza University of Rome - Italy
Occupation or position held	Graduate Student
Subject	Temozolomide e blocco dei recettori metabotropici del sottotipo 3: un nuovo approccio farmacologico nella terapia al Glioblastoma.
RESEARCH SUPPORT	2016 (PI) Sapienza Univ. of Rome, Project ID 0068595 Dysregulation of microRNAs miR146a and miR155 in Down syndrome subject with and without Alzheimer's pathology and in Ts65Dn mouse models of DS. 2015 (I) Sapienza Univ. of Rome, Project ID C26A15JMHF Ruolo delle alterazioni del metabolismo dell'acido retinoico nella carcinogenesi da HPV. 2015 (PI) Sapienza Univ. of Rome, Project ID C26N15T5L7 Identification of oxidized proteins in the brain of Ts65Dn mice, a model of Down Syndrome: possible link with cognitive decline.

EDUCATION AND TRAINING

Doctor of Philosophy degree: PhD final exam was admitted to the three-year PhD Programme in BIOCHIMICA (29° cycle) held at Sapienza University, successfully passed with classification very good on 20 January 2017.

PhD foreign student: PhD foreign student in the Dep. (Neuro) Pathology at Academisch Medisch Centrum of Amsterdam (from June 2015 to July 2016).

State Certification Exam: Professional practice exam in Biology obtained on 2nd July 2013 with final grade 185/200 at the Sapienza University of Rome.

Master degree: In Biotechnology Pharmaceutical obtained on 27th October 2011 with final grade 110 / 110 et Laude at Sapienza University of Rome.

Bachelor thesis: In Biotechnology obtained on 26th October 2009 at Sapienza University of Rome.

TECHNICAL SKILLS AND PROFESSIONAL EXPERTISE

Excellent skills in standard molecular, biochemistry and cell biology procedures such as: RNA and DNA extraction, DNA sequencing, miRNAs isolation and manipulation, Reverse Transcription-PCR (rt-PCR), Quantitative PCR (SYBR Green, TaqMan), Western blot, Immunohistochemical and *In situ* hybridization (ISH), Flow cytometric (FACS) and cell sorting, Cell culture, Cell transfection, Colony breeding, Genotyping of transgenic animals, Tissue processing, Chemidoc MP (Bio-rad) and Imagej for image analysis, Bioinformatics tools for identification of miRNAs predicted targets, Statistical analysis (GraphPad Prism software) and data collection.

PERSONAL SKILLS

Mother tongue	Italian
Other language	English
Reading	B2
Writing	B2
Speaking	B1

PUBLICATIONS

- p53-R273H Sustains ROS, Pro-Inflammatory Cytokine Release and mTOR Activation While Reducing Autophagy, Mitophagy and UCP2 Expression, Effects Prevented by wtp53. Romeo MA, Gilardini Montani MS, Benedetti R, **Arena A**, D'Orazi G, Cirone M. *Biomolecules*. 2021 Feb 24;11(3):344. doi: 10.3390/biom11030344.
- Sialic Acid-Siglec Axis in Human Immune Regulation, Involvement in Autoimmunity and Cancer and Potential Therapeutic Treatments. Giancchetti E, **Arena A**, Fierabracci A. *Int J Mol Sci*. 2021 May 28;22(11):5774. doi: 10.3390/ijms22115774.
- COVID-19: A Review on Diagnosis, Treatment, and Prophylaxis. Fierabracci A, **Arena A**, Rossi P. *Int J Mol Sci*. (2020). doi: 10.3390/ijms21145145.
- Autoimmune polyendocrine syndrome type 1 (APECED) in the Indian population: case report and review of a series of 45 patients. Fierabracci A, **Arena A**, Toto F, Gallo N, Puel A, Migaud M, Kumar M, Chengappa KG, Gulati R, Negi VS, Betterle C. *J Endocrinol Invest*. (2020). doi: 10.1007/s40618-020-01376-5.
- Effect of p53 activation through targeting MDM2/MDM4 heterodimer on T regulatory and effector cells in the peripheral blood of Type 1 diabetes patients. Pellegrino M, Traversi G, **Arena A**, Cappa M, Rosado MM, Andreani M, Delfino DV, Moretti F, Fierabracci A. *PLoS One*. (2020) 15(1):e0228296. doi: 10.1371/journal.pone.0228296. eCollection 2020
- Sorcin is an early marker of neurodegeneration, Ca²⁺ dysregulation and endoplasmic reticulum stress associated to neurodegenerative diseases. Genovese I, Giamogante F, Barazzuol L, Battista T, Fiorillo A, Vicario M, D'Alessandro G, Cipriani R, Limatola C, Rossi D, Sorrentino V, Poser E, Mosca L, Squitieri F, Perluigi M, **Arena A**, van Petegem F, Tito C, Fazi F, Giorgi C, Calì T, Ilari A, Colotti G. *Cell Death Dis*. (2020). doi: 10.1038/s41419-020-03063-y. PMID: 33060591; PMCID: PMC7566454.
- Chronic activation of antioxidant pathways and iron accumulation in epileptogenic malformations. Zimmer TS, Ciriminna G, **Arena A**, Anink JJ, Korotkov A, Jansen FE, van Hecke W, Spliet WG, van Rijen PC, Baayen JC, Idema S, Rensing NR, Wong M, Mills JD, van Vliet EA, Aronica E. *Neuropathol Appl Neurobiol*. (2019). doi: 10.1111/nan.12596
- Restoration of aberrant mTOR signaling by intranasal rapamycin reduces oxidative damage: Focus on HNE-modified proteins in a mouse model of down syndrome. 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. *Redox Biol*. (2019) 23:101162. doi: 10.1016/j.redox.2019.101162
- Reduced biliverdin reductase-A levels are associated with early alterations of insulin signaling in obesity. 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. *Biochim Biophys Acta Mol Basis Dis*. (2019) 1865(6):1490-1501. doi: 10.1016/j.bbadis.2019.02.021
- Loss of biliverdin reductase-A favors Tau hyper-phosphorylation in Alzheimer's disease. Sharma N, Tramutola A, Lanzillotta C, **Arena A**, Blarzino C, Cassano T, Butterfield DA, Di Domenico F, Perluigi M, Barone E. *Neurobiol Dis*. (2019) 125:176-189. doi: 10.1016/j.nbd.2019.02.003
- Intranasal rapamycin ameliorates Alzheimer-like cognitive decline in a mouse model of Down syndrome. Tramutola A, Lanzillotta C, Barone E, **Arena A**, Zuliani I, Mosca L, Blarzino C, Butterfield DA, Perluigi M, Di Domenico F. *Transl Neurodegener*. (2018) 7:28. doi: 10.1186/s40035-018-

- Oxidative stress and inflammation in a spectrum of epileptogenic cortical malformations: molecular insights into their interdependence. **Arena A**, Zimmer TS, van Scheppingen J, Korotkov A, Anink JJ, Mühlebner A, Jansen FE, van Hecke W, Spliet WG, van Rijen PC, Vezzani A, Baayen JC, Idema S, Iyer AM, Perluigi M, Mills JD, van Vliet EA, Aronica E. *Brain Pathol.* (2019) 29(3):351-365. doi: 10.1111/bpa.12661
- MicroRNA519d and microRNA4758 can identify gangliogliomas from dysembryoplastic neuroepithelial tumours and astrocytomas. Bongaarts A, Prabowo A, **Arena A**, Anink J, Reinten R, Jansen F, Spliet W, Thom M, Coras R, Blümcke I, Kotulka K, Jozwiak S, Grajkowska W, Söylemezoğlu F, Pimentel J, Schouten-van Meeteren A, Mills J, Iyer A, van Vliet E, Mühlebner A, Aronica E. *Oncotarget.* (2018) 9(46):28103-28115. doi: 10.18632/oncotarget.25563
- Effects of rapamycin and curcumin on inflammation and oxidative stress in vitro and in vivo - in search of potential anti-epileptogenic strategies for temporal lobe epilepsy. Drion CM, van Scheppingen J, **Arena A**, Geijtenbeek KW, Kooijman L, van Vliet EA, Aronica E, Gorter JA. *J Neuroinflammation.* (2018) 15(1):212. doi: 10.1186/s12974-018-1247-9
- Polyubiquitinylation profile in Down syndrome brain before and after the development of Alzheimer neuropathology. Tramutola A, Di Domenico F, Barone E, **Arena A**, Giorgi A, Di Francesco L, Schininà ME, Coccia R, Head E, Butterfield DA, Perluigi M. *Antioxid Redox Signal.* (2017) 26(7):280-298. doi: 10.1089/ars.2016.6686
- Modulation of GLP-1 signaling as a novel therapeutic approach in the treatment of Alzheimer's disease pathology. Tramutola A, **Arena A**, Cini C, Butterfield DA, Barone E. *Expert Rev Neurother.* (2017) 17(1):59-75. doi: 10.1080/14737175.2017.1246183
- Disturbance of redox homeostasis in Down Syndrome: Role of iron dysmetabolism. Barone E, **Arena A**, Head E, Butterfield DA, Perluigi M. *Free Radic Biol Med.* (2018) 114:84-93. doi: 10.1016/j.freeradbiomed.2017.07.009
- Developmental Expression and Dysregulation of miR-146a and miR-155 in Down's Syndrome and Mouse Models of Down's Syndrome and Alzheimer's Disease. **Arena A**, Iyer AM, Milenkovic I, Kovacs GG, Ferrer I, Perluigi M, Aronica E. *Curr Alzheimer Res.* (2017) 14(12):1305-1317. doi: 10.2174/1567205014666170706112701
- Impairment of biliverdin reductase-A promotes brain insulin resistance in Alzheimer disease: A new paradigm. Barone E, Di Domenico F, Cassano T, **Arena A**, Tramutola A, Lavecchia MA, Coccia R, Butterfield DA, Perluigi M. *Free Radic Biol Med.* (2016) 91:127-42. doi: 10.1016/j.freeradbiomed.2015.12.012
- Increased Mammalian Target of Rapamycin Signaling Contributes to the Accumulation of Protein Oxidative Damage in a Mouse Model of Down's Syndrome. Tramutola A, Lanzillotta C, **Arena A**, Barone E, Perluigi M, Di Domenico F. *Neurodegener Dis.* (2016) 16(1-2):62-8. doi: 10.1159/000441419
- Activation of p53 in Down Syndrome and in the Ts65Dn Mouse Brain is Associated with a Pro-Apoptotic Phenotype. Tramutola A, Pupo G, Di Domenico F, Barone E, Arena A, Lanzillotta C, Broekaart D, Blarzino C, Head E, Butterfield DA, Perluigi M. *J Alzheimers Dis.* (2016) 52(1):359-371. doi: 10.3233/JAD-151105

- Bach1 overexpression in down syndrome correlates with the alteration of the HO-1/BVR-A system: Insights for transition to alzheimer's disease. Di Domenico F, Pupo G, Mancuso C, Barone E, Paolini F, **Arena A**, Blarzino C, Schmitt FA, Head E, Butterfield DA, Perluigi M. *J Alzheimers Dis.* (2015) 44(4):1107-20. doi: 10.3233/JAD-141254

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