



Curriculum Vitae

Personal information **Alberto Martire**

Work experience

1. Employer: Istituto Superiore di Sanità

- Start date: 102013
- End date:
- Position: Researcher
- Activities:

Assessment of new chemical products, monoclonal antibodies, biotechnology and ATMP dossiers (preclinical studies) for clinical trial authorization.

Research: extracellular electrophysiology, molecular biology. Application: neuroscience, pharmacology of central nervous system, preclinical (in vitro, ex vivo, in vivo) studies for neurodegenerative/neuropsychiatric disorders, with a particular interest in the search for new therapeutic targets for Fragile X Syndrome.

- Country: Italy
2. Employer: Istituto Superiore di Sanità
- Start date: 102002
 - End date: 092013
 - Position: Research technician
 - Activities:

Research: extracellular electrophysiology, molecular biology. Application: neuroscience, pharmacology of central nervous system, preclinical (in vitro, ex vivo, in vivo) studies for neurodegenerative/neuropsychiatric disorders.

- Country: Italy

Education and training

1. Subject: University "La Sapienza"

- Start date: 122001
- End date:
- Qualification: Degree in Biology
- Organisation:
- Country: Italy

2. Subject: University "La Sapienza"

- Start date: 122009
- End date:
- Qualification: PhD in Pharmacology
- Organisation:
- Country: Italy

Additional information

Publications

Boussadia Z, Chiodi V, Pazienti A, Martire A. A major role for adenosine A2A receptor in the interaction between astrocytes and myelinated neurons: possible implications for the therapy of neurodegenerative disorders. *Purinergic Signal*. 2022 Jan 23. doi: 10.1007/s11302_021_09835_1. Pisa E, Martire A, Chiodi V, Traversa A, Caputo V, Hauser J, Macri S. Exposure to 3'Sialyllactose_Poor Milk during Lactation Impairs Cognitive Capabilities in Adulthood. *Nutrients*. 2021 Nov 23;13(12):4191. doi: 10.3390/nu13124191. PMID: 34959743; PMCID: PMC8707534. Di Rocco M, Galosi S, Lanza E, Tosato F, Caprini D, Folli V, Friedman J, Bocchinfuso G, Martire A, Di Schiavi E, Leuzzi V, Martinelli S. *Caenorhabditis elegans* provides an efficient drug screening platform for GNAO1-related disorders and highlights the potential role of caffeine in controlling dyskinesia. *Hum Mol Genet*. 2021 Oct 8;ddab296. doi: 10.1093/hmg/ddab296. Epub ahead of print. PMID: 34622282. Bernardo A, De Nuccio C, Visentin S, Martire A, Minghetti L, Popoli P, Ferrante A. Myelin Defects in Niemann-Pick Type C Disease: Mechanisms and Possible Therapeutic Perspectives. *Int J Mol Sci*. 2021 Aug 17;22(16):8858. doi: 10.3390/ijms22168858. PMID: 34445564; PMCID: PMC8396228. Hauser J, Pisa E, Arias Vásquez A, Tomasi F, Traversa A, Chiodi V, Martin FP, Sprenger N, Lukjancenko O, Zollinger A, Metairon S, Schneider N, Steiner P, Martire A, Caputo V, Macri S. Sialylated human milk oligosaccharides program cognitive development through a nongenomic transmission mode. *Mol Psychiatry*. 2021 Mar 4. doi: 10.1038/s41380_021_01054_9. PMID: 33664475. Martire A, Pepponi R, Liguori F, Volonté C, Popoli P. P2X7 Receptor Agonist 2'(3')_O_(4-Benzoylbenzoyl)ATP Differently Modulates Cell Viability and Corticostriatal Synaptic Transmission in Experimental Models of Huntington's Disease. *Front Pharmacol*. 2021 Feb 19; 11:633861. doi: 10.3389/fphar.2020.633861. PMID: 33679392; PMCID: PMC7933594. Ferrante A, Boussadia Z, Borreca A, Mallozzi C, Pedini G, Pacini L, Pezzola A, Armida M, Vincenzi F, Varani K, Bagni C, Popoli P, Martire A. Adenosine A2A receptor inhibition reduces synaptic and cognitive hippocampal alterations in Fmr1 KO mice. *Transl Psychiatry*. 2021 Feb 5;11(1):112. doi: 10.1038/s41398_021_01238_5. PMID: 33547274; PMCID: PMC7864914. Ferrante A, Visentin S, De Nuccio C, Martire A, Popoli P. Adenosine and Adenosine A2A Receptors as Targets for the Treatment of Niemann Pick Type C Disease. *Journal of Caffeine and Adenosine Research*. Sep 2019.98_103. <http://doi.org/10.1089/caff.2019.0014>. De Nuccio C, Bernardo A, Ferrante A, Pepponi R, Martire A, Falchi M, Visentin S, Popoli P, Minghetti L. Adenosine A(2A) receptor stimulation restores cell functions and differentiation in Niemann-Pick type C-like oligodendrocytes. *Sci Rep*. 2019 Jul 5;9(1):9782. doi: 10.1038/s41598019_46268_8.

Domenici MR, Ferrante A, Martire A, Chiodi V, Pepponi R, Tebano MT, Popoli P. Adenosine A(2A) receptor as potential therapeutic target in neuropsychiatric disorders. *Pharmacol Res.* 2019 Sep; 147:104338. doi: 10.1016/j.phrs.2019.104338.

Martire A, Lambertucci C, Pepponi R, Ferrante A, Benati N, Buccioni M, Dal Ben D, Marucci G, Klotz KN, Volpini R, Popoli P. Neuroprotective potential of adenosine A1 receptor partial agonists in experimental models of cerebral ischemia. *J Neurochem.* 2019 Jan 7. doi: 10.1111/jnc.14660.

Ferrante A, Pezzola A, Matteucci A, Di Biase A, Attorri L, Armida M, Martire A, Chern Y, Popoli P. The adenosine A(2A) receptor agonist T1_11 ameliorates neurovisceral symptoms and extends the lifespan of a mouse model of Niemann-Pick type C disease. *Neurobiol Dis.* 2018 Feb; 110:1_11.

Ferrante A, Tebano MT, Martire A, Domenici MR, Popoli P. Neuronal vs Glial Cell Contribution to Adenosine A2A Receptor-Induced Neurodegeneration. In David Blum and Luísa V. Lopes, editors: *Blum _ Adenosine Receptors in Neurodegenerative Diseases*, Oxford: Academic Press , 2017 , pp. 131 _ 150.

Cilli P, Ventura I, Minoprio A, Meccia E, Martire A, Wilson SH, Bignami M, Mazzei F. Oxidized dNTPs and the OGG1 and MUTYH DNA glycosylases combine to induce CAG/CTG repeat instability. *Nucleic Acids Res.* 2016; 44: 5190_203.

Ferrante A, De Nuccio C, Pepponi R, Visentin S, Martire A, Bernardo A, Minghetti L, Popoli P. Stimulation of adenosine A2A receptors reduces intracellular cholesterol accumulation and rescues mitochondrial abnormalities in human neural cell models of Niemann-Pick C1. *Neuropharmacology.* 2016 Apr; 103:155_62.

Popoli P, Domenici MR, Martire A, Tebano MT (2015) "Functional Interactions of Adenosine Receptors and their Possible Implications in Central Nervous System Diseases". Chapter 13, pp. 265294, in "Adenosine Signaling Mechanisms: Pharmacology, Functions and Therapeutic Aspects". Vickram Ramkumar and Roberto Paes de Carvalho Eds. Nova Science Publishers.

Alessia De Felice, Annamaria Confaloni, Alessio Crestini, Roberta De Simone, Fiorella MalchiodiAlbedi, Alberto Martire, Andrea Matteucci, Luisa Minghetti, Patrizia Popoli, Aldina Venerosi, Gemma Calamandrei (2015) "Branched Chain Amino Acids in Experimental Models of Amyotrophic Lateral Sclerosis", in "Branched Chain Amino Acids in Clinical Nutrition". Springer New York.

Ferrante A, Martire A, Pepponi R, Varani K, Vincenzi F, Ferraro L, Beggiato S, Tebano MT, Popoli P. Expression, pharmacology and functional activity of adenosine A1 receptors in genetic models of Huntington's disease. *Neurobiol Dis.* 2014 Nov; 71:193_204.

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Martire A, Pepponi R, Domenici MR, Ferrante A, Chiodi V, Popoli P. BDNF prevents NMDA-induced toxicity in models of Huntington's disease: the effects are genotype specific and adenosine A2A receptor is involved. *J Neurochem.* 2013 Apr; 125(2): 225_35.

Scattoni ML, Martire A, Cartocci G, Ferrante A, Ricceri L. Reduced social interaction, behavioural flexibility and BDNF signalling in the BTBR T+tf/J strain, a mouse model of autism. *Behav Brain Res.* 2013 Aug 15; 251:35_40.

Burnouf S, Martire A, Derisbourg M, Laurent C, Belarbi K, Leboucher A, Fernandez-Gomez FJ, Troquier L, Eddarkaoui S, Grosjean ME, Demeyer D, Muhr-Tailleux A, Buisson A, Sergeant N, Hamdane M, Humez S, Popoli P, Buée L, Blum D. NMDA receptor dysfunction contributes to impaired brain-derived neurotrophic factor-induced facilitation of hippocampal synaptic transmission in a Tau transgenic model. *Aging Cell.* 2013 Feb; 12(1):11_23.

Tebano MT, Martire A, Popoli P. Adenosine A(2A)-cannabinoid CB(1) receptor interaction: an integrative mechanism in striatal glutamatergic neurotransmission. *Brain Res.* 2012 Oct 2;1476:10818.

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Chiodi V, Uchigashima M, Beggiato S, Ferrante A, Armida M, Martire A, Potenza RL, Ferraro L, Tanganelli S, Watanabe M, Domenici MR, Popoli P. Unbalance of CB1 receptors expressed in GABAergic and glutamatergic neurons in a transgenic mouse model of Huntington's disease. *Neurobiol Dis.* 2012 Mar;45(3):983_91.

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Tebano MT, Martire A, Potenza RL, Grò C, Pepponi R, Armida M, Domenici MR, Schwarzschild MA, Chen JF, Popoli P. Adenosine A(2A) receptors are required for normal BDNF levels and BDNF-induced potentiation of synaptic transmission in the mouse hippocampus. *J Neurochem.* 2008 Jan;104(1):279_86.

Bisogno T, Martire A, Petrosino S, Popoli P, Di Marzo V. Symptom-related changes of endocannabinoid and palmitoylethanolamide levels in brain areas of R6/2 mice, a transgenic model of Huntington's disease. *Neurochem Int.* 2008 Jan;52(1_2):307_13.

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Popoli P, Pepponi R, Martire A, Armida M, Pèzzola A, Galluzzo M, Domenici MR, Potenza RL, Tebano MT, Mollinari C, Merlo D, Garaci E. Neuroprotective effects of thymosin beta4 in experimental models of excitotoxicity. *Ann N Y Acad Sci.* 2007 Sep;1112:219_24.

Domenici MR, Scattoni ML, Martire A, Lastoria G, Potenza RL, Borioni A, Venerosi A, Calamandrei G, Popoli P. Behavioral and electrophysiological effects of the adenosine A2A receptor antagonist SCH 58261 in R6/2 Huntington's disease mice. *Neurobiol Dis.* 2007 Nov;28(2):197_205.

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Tebano MT, Martire A, Rebola N, Pepponi R, Domenici MR, Grò MC, Schwarzschild MA, Chen JF, Cunha RA, Popoli P. Adenosine A2A receptors and metabotropic glutamate 5 receptors are colocalized and functionally interact in the hippocampus: a possible key mechanism in the modulation of N_methyl_D_aspartate effects. *J Neurochem.* 2005 Nov;95(4):1188_200.

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Domenici MR, Pepponi R, Martire A, Tebano MT, Potenza RL, Popoli P. Permissive role of adenosine A2A receptors on metabotropic glutamate receptor 5 (mGlu5)_mediated effects in the striatum. *J Neurochem.* 2004 Sep;90(5):1276_9.

Tebano MT, Pintor A, Frank C, Domenici MR, Martire A, Pepponi R, Potenza RL, Grieco R, Popoli P. Adenosine A2A receptor blockade differentially influences excitotoxic mechanisms at pre_ and postsynaptic sites in the rat striatum. *J Neurosci Res.* 2004 Jul 1;77(1):100_7.

Popoli P, Pintor A, Tebano MT, Frank C, Pepponi R, Nazzicone V, Grieco R, Pèzzola A, Reggìo R, Minghetti L, De Berardinis MA, Martire A, Potenza RL, Domenici MR, Massotti M. Neuroprotective effects of the mGlu5R antagonist MPEP towards quinolinic acid_induced striatal toxicity: involvement of pre_ and post_synaptic mechanisms and lack of direct NMDA blocking activity. *J Neurochem.* 2004 Jun;89(6):1479_89.

Sciamanna I, Barberi L, Martire A, Pittoggi C, Beraldi R, Giordano R, Magnano AR, Hogdson C, Spadafora C. Sperm endogenous reverse transcriptase as mediator of new genetic information. *Biochem Biophys Res Commun.* 2003 Dec 26;312(4):1039_46.

Projects

Since January 2014: I have been the Principal Investigator of the following project: GR_2011_02348150 "Adenosine A2A receptors as a possible therapeutic target in Niemann_Pick type C disease" (Grant of 342.000,00 Euros from Italian Ministry of Health for 2014_2015_2016, extended until November 2018). Since October 2018: I have been the Principal Investigator of the following project: "Characterization of Adenosine Receptors in a Mouse Model of Fragile X Syndrome" (Grant of 90.000,00 USD from FRAXA Research Foundation for 2018_2021). FRAXA Research Foundation is one of the main US Organizations representing individuals, and related families, with Fragile X Syndrome. Since October 2021: I have been a collaborator in the following project: "Characterization of microglia transcriptional profile in fmr1ko mice model" (Grant of 45.000,00 USD from FRAXA Research Foundation for 2021_2022). July 2021: Principal Investigator of the following project: "Exosomes as a source of therapeutic biomarkers in experimental models of Fragile X Syndrome"; a grant from ISS intramural funding; 2020_2023. Since October 2022: I am currently the PI of the following project: "Exosomes as a source of therapeutic biomarkers in experimental models of Fragile X Syndrome" (Grant of 50.000,00 USD from FRAXA Research Foundation for 2022_2023).

Memberships

Other Relevant Information