

Prof. Micaela Morelli

Phone 070 6758663

Fax 070 6758612

e-mail morelli@unica.it

Born in Brindisi in 19.04.1953

Professional and Academic Career

1976 Degree Biological Sciences with full credit

1978-81 Fellowship, Institute of Pharmacology, Univ. of Cagliari

1981-82 and 1985-86 Research Associate Department of Pharmacology, Univ. of Arizona, Tucson

1982-90 Researcher, Institute of Pharmacology, Univ. of Cagliari

From 1990 Full Professor of Pharmacology Univ. of Cagliari

From 1995 CNR Institute of Neuroscience

1997-2000 Chairman of the Dpt. of Toxicology, Univ. of Cagliari

From 2001 Center of Excellence for Neurobiology of Dependence

- Evaluator panel for Academic positions:

2008, 2013: NRF, Univ. of KwaZulu Natal and Stellenbosch, South Africa

2009 Department of Health & Human Services (NIH), USA

2009 Karolinska Institute, Stockholm, Sweden

- Opponent for PhD thesis:

2008 Univ. of Stellenbosch, South Africa; dr. Ilse-Sanet Pienaar

2008 Karolinska Institutet, Stockholm; dr. dr. X. Zhang

2008 CNRS, Univ. of Marseille; dr. S. Lopez

2011 Univ. of Lund, Sweden, dr. D. Rylander

2012 Univ. of Murcia, Spain, dr. J. Enrique

-International networking

From 1994 Polish Academy of Sciences, Krakow, funded by Italian-Polish Dpt. of Foreign Affairs (J.Wardas)

1998-2011 Nagpur Univ. India, funded by Regione Sardegna and Italian-Indian Dpt. of Foreign Affairs (C.T.Chopde, R.Ugale, S.Kasture, A.Khairnar)

1999-2001 Russian Academy of Sciences, funded by NATO Science Program (V.Vorobyov)

From 2004 Univ. Stellenbosch and Zulu-Natal (South Africa), funded by South African-Italian Dpt. of Foreign Affairs (W.Daniels)

From 2003-2004 and from 2010-2011 University of Chile, Santiago (Mario Herrera-Marschitz)

Research interests

The main subjects of investigation have been on the mechanism of action of drugs affecting dopaminergic and adenosinergic transmission and their interaction in rodent models of Parkinson's disease. The research group has expertise in behavioral evaluation of motor dysfunctions and biochemical markers of basal ganglia function. The experimental techniques utilized in the laboratory, range from immunohistochemical evaluation of enzyme, proteins etc. (tyrosine hydroxylase, DAT, GFAP, CD11b, Fos) and *in situ* hybridization for evaluation of mRNA for early-genes, peptides, enzymes (*zif-268*, dynorphin, enkephalin, GAD67). The main scientific accomplishments have been the identification of adenosine A2A receptor antagonists ability to counteract motor and biochemical deficits in basal ganglia of parkinsonian rodents and to evidence their neuroprotective effects.

Most recent findings have shown that amphetamine-related drugs produce dopamine neuron degeneration and stimulate glial activation

Administrative and organizational experience

Organizing committee of: Basal Ganglia Society Meeting (Italy, 1989); European Behavioral Pharmacological Society (Italy, 1996); Joint Italian-Swedish Neuroscience Meeting (Italy, 2005), Targeting adenosine A2A receptors in Parkinson's disease and other CNS disorders (Boston, USA, 2006); Basal Ganglia Society Meeting (The Netherland, 2007); 8th IBRO (Italy, 2011), Basal Ganglia Society Meeting (Israel, 2013), Dopamine 2013 (Italy, 2013).

2001-2006 Italian Neuroscience Society Governing Council

2004- 2010 International Basal Ganglia Society Governing Council

From 2004 Representative of the University of Cagliari in the Governing Council of the Bank of Sardinia Foundation

From 2005 Italian representative in the International Brain research Organization (IBRO)

From 2009 Member of the Research Scientific Committee of Sardinia Region

From 2010 Member of IBRO WERC/PERC Governing Council

Specific expertise in organization of national and international training of students

-Experience in IBRO educational and training activities. Evaluator for selection of fellowships, travel grants and training courses for students in IBRO and WERC sponsored training programs.

-Organization of the first Young Investigator Program (YIP) for the 8th IBRO meeting in Florence 2010. About 90 PhD students were selected to spend one month in a European laboratory for training.

- In charge for the organization of the Young Investigator Training Program (YITP) for the 9th FENS meeting in Milan 2014
- From 2000-2013 Councilor of the PhD school in “Pharmacology of drug-dependence” of the University of Cagliari
- From 2013 Councilor of the PhD school in “Neuroscience” of the University of Cagliari
- From 2012 organization of “UNISTEM DAY” in Sardinia. European dissemination event targeted to high school students <http://users2.unimi.it/unistem/index.php/archive-unistemday/?lang=en>
- From 2003 to 2009 responsible of a course of Neuroscience in the Faculty of Philosophy

Selected recent publications

Schwarzschild, M.A., Agnati, L., Fuxe, K., Chen, J.F., Morelli, M. Targeting adenosine A_{2A} receptors in Parkinson's disease. *Trends. Neurosci.* 2006, 29 (11): 647-654.

Morelli M, Di Paolo T, Wardas J, Calon F, Xiao D, Schwarzschild MA. (2007) Role of adenosine A_{2A} receptors in parkinsonian motor impairment and l-DOPA-induced motor complications. *Prog Neurobiol.* 83: 293-309

Simola N, Morelli M, Carta AR. The 6-hydroxydopamine model of Parkinson's disease. *Neurotox Res.* 2007 Apr;11(3-4):151-67.

Carta AR, Frau L., Pinna A., Pontis S., Simola N., Schintu N., Morelli M. (2008) Behavioral and biochemical correlates of the dyskinetic potential of dopaminergic agonists in the 6-OHDA lesioned rat. *Synapse.* 2008 Jul;62(7):524-33.

Morelli, M., Carta, A.R., Jenner, P. Adenosine A_{2A} receptors and Parkinson's disease *Handbook of Experimental Pharmacology* Vol 193, 2009, Pages 589-615

Simola N, Di Chiara G, Daniels WM, Schallert T, Morelli M. (2009) Priming of rotational behavior by a dopamine receptor agonist in hemiparkinsonian rats: Movement-dependent induction. *Neuroscience* 18;158(4):1625-31

Kasture S, Pontis S, Pinna A, Schintu N, Spina L, Longoni R, Simola N, Morelli M (2009) Assessment of Symptomatic and Neuroprotective Efficacy of Mucuna Pruriens Seed Extract in Rodent Model of Parkinson's Disease. *Neurotoxicity Research* 15 (2): 111-122

Carta AR, Kachroo A, Schintu N, Xu K, Schwarzschild MA, Wardas J, Morelli M. (2009) Inactivation of neuronal forebrain A receptors protects dopaminergic neurons in a mouse model of Parkinson's disease. *J Neurochem.* Dec;111(6):1478-89.

Amit Khairnar, Antonio Plumitallo, Lucia Frau, Nicoletta Schintu, and Micaela Morelli. (2010) Caffeine enhances astroglia and microglia reactivity induced by 3,4-methylenedioxymethamphetamine (MDMA, 'ecstasy') in mouse brain. *Neurotox. Research* May;17(4):435-9.

Pinna A, Tronci E, Schintu N, Simola N, Volpini R, Pontis S, Cristalli G, Morelli M. (2010) A new ethyladenine antagonist of adenosine A_{2A} receptors: behavioral and biochemical characterization as an antiparkinsonian drug. *Neuropharmacology*. Mar;58(3):613-23. Epub 2009 Dec 4.

Carta AR, Frau L, Pinna A, Morelli M. Dyskinetic potential of dopamine agonists is associated with different striatonigral/striatopallidal zif-268 expression. *Exp Neurol*. 2010 Aug;224(2):395-402

Morelli M, Simola N. (2011) Methylxanthines and drug dependence: a focus on interactions with substances of abuse. *Methylxanthines, Handbook of Experimental Pharmacology*, (2010):483-507 Springer Editor

Frau, L., Borsini, F., Wardas, J., Khairnar, A.S., Schintu, N., Morelli, M. Neuroprotective and anti-inflammatory effects of the adenosine A_{2A} receptor antagonist ST1535 in a MPTP mouse model of Parkinson's disease *Synapse* Vol 65, Issue 3, March 2011, Pages 181-188

Simola N, Fenu S, Costa G, Pinna A, Plumitallo A, Morelli M. Pharmacological characterization of 50-kHz ultrasonic vocalizations in rats: comparison of the effects of different psychoactive drugs and relevance in drug-induced reward. *Neuropharmacology*. 2012 Aug;63(2):224-34

Morelli M, Frau L, Simola N. Alteration in the progression of dopamine neuron degeneration: may caffeine offer new perspective? *Exp Neurol*. 2012 Sep;237(1):218-22

Morelli M, Blandini F, Simola N, Hauser RA. A_{2A} Receptor Antagonism and Dyskinesia in Parkinson's Disease *Parkinsons Dis*. 2012;2012:489853. Epub 2012 Jun 17

Frau L, Simola N, Plumitallo A, Morelli M. Microglial and astroglial activation by 3,4-methylenedioxymethamphetamine (MDMA) in mice depends on S(+) enantiomer and is associated with an increase in body temperature and motility. *J. Neurochem*. 2013 Jan;124(1):69-78

Baiguera C, Alghisi M, Pinna A, Bellucci A, De Luca MA, Frau L, Morelli M, Ingrassia R, Benarese M, Porrini V, Pellitteri M, Bertini G, Fabene PF, Sigala S, Spillantini MG, Liou HC, Spano PF, Pizzi M. Late-onset Parkinsonism in NFκB/c-Rel-deficient mice. *Brain*. 2012 Sep;135(Pt 9):2750-65.

Lucia Frau, Micaela Morelli, Nicola Simola. Performance of movement in hemiparkinsonian rats influences the modifications induced by dopamine agonists in striatal efferent dynorphinergic neurons *Exp Neurol*. 2013 Mar 13

Frau L, Simola N, Plumitallo A, **Morelli M**. (2013) Microglial and astroglial activation by 3,4-methylenedioxymethamphetamine (MDMA) in mice depends on S(+) enantiomer and is associated with an increase in body temperature and motility. *J Neurochem*. Jan;124(1):69-78. doi: 10.1111/jnc.12060.

Costa G, Frau L, Wardas J, Pinna A, Plumitallo A, **Morelli M**. (2013) MPTP-induced dopamine neuron degeneration and glia activation is potentiated in MDMA-pretreated mice. *Mov Disord*. Dec;28(14):1957-65