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Decreto Rettore Università di Roma "La Sapienza" n. 2866/2020 del 13/11/2020.

SERGIO FUCILE Curriculum Vitae

Roma, 2020 November 23

Part I – General Information

Full Name	SERGIO FUCILE
Spoken Languages	Italian, English, French

Part II – Education

1986 - High School Degree (60/60).

June 1992 - Graduate in Physics at Rome University "La Sapienza" (110/110), with the thesis in Biophysics entitled: *Intracellular Ca²⁺ Transients Studied by Time-Resolved Fluorescence Microscopy*.

1992-1996 - PhD student in Experimental Medicine, Department of Experimental Medicine and Pathology, Rome University "La Sapienza". Research activity in the Biophysics Laboratory of the Experimental Research Centre, Regina Elena Institute (Rome), directed by Prof. Fabrizio Eusebi.

1993 - Short term fellowship at the Yale Eye Center (Yale School of Medicine, Yale University, New Haven, CT-USA), to study the relationship between acetylcholine receptors and glaucoma.

1994 - Participation supported by EMBO to the EMBO course entitled: "Optical probes for intracellular signalling in living cells", 10-16 July 1994, The Babraham Institute, Cambridge UK.

1996 - PhD in Experimental Medicine, Department of Experimental Medicine, Rome University "La Sapienza", with the thesis in Biophysics entitled: *Functional Properties and Structural Correlates of the Muscle Nicotinic Acetylcholine Receptor*.

Part III – Appointments

IIIA – Academic Appointments

From November 2000 - Research Scientist at the Department of Human Physiology “V. Erspamer”, First Faculty of Medicine, Rome University “La Sapienza”.

From March 2007 - Associated Professor of Physiology at the Department of Physiology and Pharmacology “V. Erspamer”, First Faculty of Medicine, Sapienza Rome University.

2010, March 1 - Confirmed Associated Professor of Physiology at the Department of Physiology and Pharmacology “V. Erspamer”, First Faculty of Medicine, Sapienza Rome University.

From November 1st 2016 to October 31st 2019 - Member of the Academic Senate of Sapienza Rome University

From November 1st 2020 to date – Member of the Faculty Junta, Faculty of Pharmacy and Medicine, Sapienza University of Roma

IIIB – Other Appointments

November 1996 - May 1997 - Research Grant from Istituto Pasteur - Fondazione Cenci-Bolognetti (Rome), obtained with the research project: *Functional Characterization of the γ_5 Subunit of Muscle Nicotinic Acetylcholine Receptor*.

June 1997 - November 1998 - Post-Doctoral Position "Post Vert" INSERM (Institut National de la Santé et Recherche Médicale). Research activity in the Cellular Neurobiology Laboratory, directed by Prof. H. Korn, of Pasteur Institut, Paris.

December 1998 - October 2000 - Post Doctoral Position in the Department of Experimental Medicine and Pathology, Rome University “La Sapienza”. Research activity in the Biophysics Laboratory of the Human Physiology Institute, Rome University “La Sapienza”, directed by Prof. F. Eusebi.

From January 2007 to date - Scientific collaboration with IRCCS Neuromed, Pozzilli (Is), laboratory of Experimental Epilepsy, Dept. of Molecular Pathology.



Part IV – Teaching experience

From July 23rd 2008 to date

Vice-President of the degree course in Nursing, IRCCS Neuromed, Pozzilli (Isernia, Molise), Sapienza Rome University.

From academic year 2000/2001 to date

Teaching activity in the Integrated Course of Human Physiology, Medicine degree course “D”, Sapienza Rome University.

From academic year 2007/2008 to date

Coordinator of the Integrated Course in Anatomy and Physiology of the Human Body, degree course in Nursing, IRCCS Neuromed, Pozzilli (Isernia, Molise), Sapienza Rome University.

From academic year 2006/2007 to date

Physiology teaching in Sports Medicine specialization course, Sapienza Rome University.

From academic year 2009/2010 to date

Physiology teaching in Otolaryngology specialization course, Sapienza Rome University.

From academic year 2012/2013 to date

Physiology teaching in Nephrology specialization course, Sapienza Rome University.

From academic year 2012/2013 to date

Teaching activity in the PhD course in Clinical-Experimental Neurosciences and Psychiatry, Sapienza Rome University.

From academic year 2017/2018 to date

Teaching activity in the Integrated Course of Human Physiology, Medicine degree course “C”, Sapienza Rome University.

From academic year 2012/2013 to academic year 2015/2016

Coordinator of the Integrated Course in Anatomy and Physiology of the Human Body, degree course in Nursing, ASREM (Isernia, Molise), Sapienza Rome University.

From academic year 2004/2005 to academic year 2011/2012

Teaching activity in the PhD course in Neurophysiology, Sapienza Rome University.

From academic year 2001/2002 to academic year 2003/2004

Teaching activity in the PhD course in Biophysics, Sapienza Rome University.

From academic year 2009/2010 to 2018/2019

Physiology teaching in Ophthalmology specialization course, Sapienza Rome University.



Part V - Society memberships, Awards and Honors

From January 2004 to date

Member of the Italian Society for Physiology (S.I.F)

2018, August 3 - National Scientific Qualification as Full Professor in Physiology, scientific sector BIO-09

2014, January 31 - National Scientific Qualification as Full Professor in Physiology, scientific sector BIO-09.

October 2009

Winner of the first edition of the **Prize “Sapienza Ricerca”**, Under 40 section, for the excellence of the research (2004-2008) entitled “Ca²⁺ permeability of nicotinic acetylcholine receptors”.

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

European projects

ERA-NET NEURON "European Research Projects on Mental Disorders", transnational research projects 2010

Project title: NICO-GENE, "Modelling human polymorphisms for nicotine addiction in mice"

Principal Investigator of Italian Unit: Sergio Fucile

Grant to the Italian Unit: euro 300.000

National Projects

PRIN 2009

Project title: “Structure and function of nicotinic acetylcholine receptors (nAChRs) in neuronal systems of positive and negative reinforcement, mesolimbic and habenular-interpeduncular system”.

Principal Investigator of the Sapienza University Unit: Sergio Fucile

Grant to the Sapienza University Unit: euro 50.366

Progetto Conto Capitale 2013 Ministero della Salute

Project title: “Functional analysis of *ex-vivo* cerebral tissue from patients with Central Nervous System pathologies, to develop a personalized pharmacological strategy”

Principal Investigator: Sergio Fucile

Grant: euro 269.100

Local Projects

Principal investigator in scientific projects funded by Sapienza Rome University in the following years:

2005, 2006, 2007, 2008, 2009, 2010, 2013, 2014, 2015, 2016, 2018



Part VII – Research Activities

Brief Description

Study of the physiological role of muscle and neuronal nicotinic acetylcholine receptors, glycine receptors, glutamate receptors and GABA_A receptors.

Study of Ca²⁺ permeability of ligand-gated ionic channels.

Study of the involvement of GABA_A receptors in human temporal lobe epilepsy

Study of the mechanisms underlying changes in the intracellular free Ca²⁺ concentration.

Study of the physiological role of intracellular Ca²⁺ in the cardiovascular system.

Keywords

Ligand-gated ion channels

Nicotinic receptors

Ca²⁺ permeability

Intracellular free Ca²⁺ concentration

Temporal lobe epilepsy.

ResearcherID: B-3934-2010

From 2007 to date Scientific Coordinator of a scientific group (number of components ranging from 3 to 5; currently composed by the following scientific personnel: Massimiliano Renzi, PhD, Senior Researcher; Katuscia Martinello, PhD, Researcher; Tiziano D'Andrea, PhD student).

Scientific Collaborations with several scientific groups:

International

Uwe Maskos, Pasteur Institute, Paris, France

Isabel Bermudez, Brooks University, Oxford, England

Jerry Stitzel, University of Colorado, Boulder, CO, USA

National

Cecilia Gotti, CNR, Milano

Michele Zoli, Università di Modena e Reggio Emilia

Marco Pallavicini, Università di Milano

Marco De Amici, Università di Milano

Annibale Puca, Università di Salerno

Member of the Editorial Board:

Brain Sciences (Impact Factor 3.332; from March 2020)

Peer Reviewer for several scientific journals:

Journal of Physiology, Cell Calcium, Journal of Pharmacology and Experimental Therapeutics, Journal of Neurochemistry, Journal of Theoretical Biology, Biologia, Acta Biochimica et Biophysica Sinica, Brain Sciences and other journals.

Invited speaker:

16/3/2007 CNR, Istituto di Neuroscienze, Milano, Italy
Permeabilità al Ca^{2+} di canali ionici controllati da ligandi

6/5/2008 Istituto Neuromed, Pozzilli, Italy
Il run-down dei recettori GABA_A nell'epilessia del lobo temporale: modulazione da parte dei recettori dell'adenosina

14/6/2009 Spring Hippocampal Research Conference, Verona, Italy
Epilepsy-related alterations of GABA-A receptor function in temporal cortex and hippocampus: the role of adenosine

22/1/2010 University of Verona, Verona, Italy
Modulazione dei recettori GABA_A nell'epilessia del lobo temporale

28/5/2010 National Congress, LICE, Mantova, Italy
Modulazione delle correnti GABA_A da parte dei recettori GABA_B in neuroni piramidali temporali in tessuto epilettico o di controllo

14/6/2010 Fondazione Roma Sapienza, Rome, Italy
Nicotina, calcio e informazione...biologica

16/9/2010 National Congress, Italian Society of Physiology, Varese, Italy
Modulation of GABA_A -mediated currents by GABA_B receptors in temporal pyramidal neurons in control or epileptic tissue

10/5/2013 National Congress, Italian Society of Clinical Neurophysiology, Florence, Italy
Fisiopatologia del potenziale di membrana dell'assone

5/12/2013 International congress "Movement disorders in childhood", Rome, Italy
Nicotinic receptors and the dopaminergic system

25/7/2014 International Congress "Nicotinic Acetylcholine Receptors", Cambridge, UK
Nicotinic $\alpha 5$ subunits and Ca^{2+} fluxes

9/6/2015 International Congress "Theatre as enriched environment", Rome, Italy
Theatre as enriched environment: a multidisciplinary project



3/7/2015 University of Milan, Milan, Italy
Ca²⁺ fluxes through nicotinic acetylcholine receptors

15/6/2017 Istituto Neuromed Pozzilli, Italy
Nicotina e calcio

16/5/2019 International Meeting “Temporal Lobe Epilepsy: A window on the brain”,
Castelpetroso, Italy
Temporal lobe epilepsy: receptors, neurotransmitters and anomalies of synaptic transmission

Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers [international]	77	Pubmed, ISI-WOS, Scopus	1993	2020
Books [scientific]	1 chapter		2014	

Total Impact factor	389,947
Average Impact factor per Product	5.06
Impact Factor in the last 10 Years (2011 – 2020)	152,391
Total Citations	1873, Scopus
Average Citations per Product	24,3
Hirsch (H) index	29, Scopus
Normalized H index*	1.07

*H index divided by the academic seniority.

Part IX– Selected Publications

List of the publications selected for the evaluation.

For each publication report title, authors, reference data, journal IF and citations are reported.

- 16) S. Plutino, M. Sciacaluga, S. Fucile (2019) Extracellular mild acidosis decreases the Ca²⁺ permeability of the human NMDA receptors. *Cell Calcium*, 80: 63-70. **I.F. 3.718. Cit. 2**
- 15) K. Martinello, M. Sciacaluga, R. Morace, A. Mascia, A. Arcella, V. Esposito, S. Fucile (2018) Loss of constitutive functional γ -aminobutyric acid type A-B receptor crosstalk in layer 5 pyramidal neurons of human epileptic temporal cortex. *Epilepsia*, 59: 449-459. **I.F. 5.295. Cit. 3**
- 14) S. Fucile (2017) The distribution of charged amino acid residues and the Ca²⁺ permeability of nicotinic acetylcholine receptors: a predictive model. *Front Mol Neurosci*, 10: 155. **I.F. 5.154. Cit. 4**
- 13) M. Sciacaluga, C. Moriconi, K. Martinello, M. Catalano, I. Bermudez, J.A. Stitzel, U. Maskos, S. Fucile (2015) Crucial role of nicotinic $\alpha 5$ subunit variants for Ca²⁺ fluxes in ventral midbrain neurons. *FASEB J*, 29: 3389-3398. **I.F. 5.480. Cit. 22**
- 12) M.J. Diógenes*, R. Neves-Tomé*, S. Fucile*, K. Martinello, M. Scianni, P. Theofilas, J. Lopatár, J.A. Ribeiro, L. Maggi, B.G. Frenguelli, C. Limatola, D. Boison, A.M. Sebastião (2014) Homeostatic control of synaptic activity by endogenous adenosine is mediated by adenosine kinase. *Cereb Cortex*, 24: 67-80. **I.F. 6.544. Cit. 40**
* **equal contributions as First Author.**
- 11) V. Piccari, C. Deflorio, R. Bigi, F. Grassi, S. Fucile (2011) Modulation of the Ca²⁺ permeability of human endplate acetylcholine receptor-channel. *Cell Calcium*, 49: 272-278. **I.F. 4.288. Cit. 7**
- 10) C. Roseti, E. Palma, K. Martinello, S. Fucile*, R. Morace, V. Esposito, G. Cantore, A. Arcella, F. Giangaspero, E. Aronica, A. Mascia, G. Di Gennaro, P.P. Quarato, M. Manfredi, G. Cristalli, C. Lambertucci, G. Marucci, R. Volpini, C. Limatola, F. Eusebi (2009). Blockage of A2A and A3 adenosine receptors decreases the desensitization of human GABA(A) receptors microtransplanted to *Xenopus* oocytes. *Proc Natl Acad Sci U S A.*, 106:15927-15931. **I.F. 9.380. Cit. 20**
* **Corresponding Author**
- 9) S. Fucile, A. Sucapane, F. Grassi, F. Eusebi, A.G. Engel (2006). The human adult subtype AChR-channel has high Ca²⁺ permeability, predisposing to the endplate Ca²⁺ overloading in slow-channel myasthenic syndrome. *J Physiol.*, 573: 35-43. **I.F. 4.407. Cit. 41**
- 8) S. Fucile, R. Miledi, F. Eusebi (2006). Effects of cyclothiazide on GluR1/AMPA receptors. *Proc. Natl. Acad. Sci. USA.*, 103: 2943-2947. **I.F. 9.643. Cit. 38**
- 7) S. Fucile, A. Sucapane, F. Eusebi (2005). Ca²⁺ permeability of nicotinic acetylcholine receptors from rat dorsal root ganglion neurones. *J. Physiol.*, 565: 219-228. **I.F. 4.272. Cit. 43**
- 6) S. Fucile (2004). Ca²⁺ permeability of nicotinic acetylcholine receptors. *Cell Calcium*, 35: 1-8. **I.F. 5.186. Cit. 233**



- 5) S. Fucile, E. Palma, A. Martinez-Torres, R. Miledi, F. Eusebi (2002) The single-channel properties of human acetylcholine $\alpha 7$ receptors are altered by fusing $\alpha 7$ to the green fluorescent protein. *Proc. Natl. Acad. Sci. USA*, **99**: 3956-3961. **I.F. 10.700. Cit. 36**
- 4) S. Fucile, D. de Saint Jan, L. Prado de Carvalho, P. Bregestovski (2000) Fast potentiation of glycine receptor channels by intracellular calcium in neurons and transfected cells. *Neuron*, **28**: 571-583. **I.F. 15.081. Cit. 57**
- 3) S. Fucile, E. Palma, A.M. Mileo, R. Miledi, F. Eusebi (2000) Human neuronal threonine-for-leucine $\alpha 7$ mutant nicotinic acetylcholine receptors are highly Ca^{2+} permeable. *Proc. Natl. Acad. Sci. USA*, **97**: 3643-3648. **I.F. 10.789. Cit. 44**
- 2) S. Fucile, D. de Saint Jan, B. David-Watine, H. Korn, P. Bregestovski (1999) Comparison of glycine and GABA actions on the zebrafish homomeric glycine receptor. *J. Physiol.*, **517.2**: 369-383. **I.F. 4.455. Cit. 47**
- 1) S. Fucile, J.M. Matter, L. Erkman, D. Ragozzino, B. Barabino, F. Grassi, S. Alemà, M. Ballivet, F. Eusebi (1998) The neuronal $\alpha 6$ subunit forms functional heteromeric acetylcholine receptors in human transfected cells. *Eur. J. Neurosci.*, **10**: 172-178. **I.F. 3.862. Cit. 57**

Rona 23/11/2020

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