

Curriculum Vitae

PERSONAL INFORMATION

Family name, First name: **CASTORINA, Alessandro**

Family : De facto – Rubina MARZAGALLI, son – Francesco CASTORINA

Researcher unique identifier(s) **ORCID no.:** [0000-0001-7037-759X](https://orcid.org/0000-0001-7037-759X)

Date of birth: **22nd October, 1978**

E-mail: alecasto@unict.it or a.castorina@sydney.edu.au

URL for web site: <http://biometec.unict.it/member/castorina-alessandro/>;
<http://sydney.edu.au/medicine/people/academics/profiles/a.castorina.php>

SUMMARY OF THE RESEARCHER PROFILE

Dr. Alessandro Castorina has been a proactive and highly motivated scholar since his first approach to research as an undergraduate student. Since the initial phases of his academic career he has always held a relevant role in the research activities he was involved and has constantly demonstrated strong commitment to pursue his goals. His devotion and love for research has progressively increased over the years, as demonstrated by the increasing number of scientific productions on impact-factored journals (currently 29 publications [12 papers as principal/first author and 4 as senior/last author] and several ongoing works, including an invited book chapter). His main interests are studying the broad function of neuropeptides in the central and peripheral nervous system (CNS and PNS), with particular focus on pituitary adenylyl cyclase-activating peptide (PACAP) and its related homolog vasoactive intestinal peptide (VIP). Dr. Castorina enthusiasm in studying PACAP and VIP functions together with the desire to discover new therapies to treat chronic neurodegenerative/neuroinflammatory conditions has led him to take the initiative to contacting eminent scholars sharing similar research interests. Dr. Castorina has now several well-established international collaborations with eminent scientist from all over the world, including with distinguished academics from the University of Sydney (please refer to major collaborations below). He has more than seven years of lecturing experience in Anatomy and Neuroanatomy and almost nine years' experience in Anatomy / Neuroanatomy laboratories, both held for numerous Medical, Biomedical and Health Science courses. Dr. Castorina currently holds a tenured position equivalent to Senior Lecturer in the Discipline of Anatomy at the University of Catania, Italy and is willing to undertake new international challenges to grow both professionally and personally.

• EDUCATION

04/05/2009 – 27/12/2011

Post-doctoral research fellowship

Faculty of Medicine and Surgery/ Department of Bio-Medical Sciences,
University of Catania, Italy

01/11/2005 – 14/02/2009

International Ph.D. in Neuropharmacology

Faculty of Medicine and Surgery/ Department of Clinical and Molecular
Biomedicine, University of Catania, Italy - Université Victor Segalen
Bordeaux 2, Bordeaux, France

01/10/2001 – 21/07/2005

**Unified Bachelor's Degree in Physical Education / Sport Science –
Master Degree in Biomedical Sciences** (according to Bologna's
International Agreement)

Faculty of Medicine and Surgery/ Department of Clinical and Molecular

Alessandro Castorina MS, PhD – Lecturer (Senior) in the Discipline of Anatomy and Neuroanatomy at the University of Catania, Italy – Office ph. +390953782037; Mobile +393207864051 – in Australia Mobile (+61) 422300507

Biomedicine, University of Catania, Italy

• CURRENT POSITION(S)

14/09/2015 – 13/09/2016 **Research Fellow at the Laboratory of Neural Structure and Function (12 months fixed-term contract)**
Discipline of Anatomy & Histology, School of Medical Sciences, Sydney Medical School, The University of Sydney, Sydney, NSW, Australia

31/12/2011 – to present
(*currently on sabbatical*) **Assistant Professor / Lecturer (Senior) in the Discipline of Anatomy and Neuroanatomy (tenured position)**
Department of Biomedical Sciences and Biotechnologies, University of Catania, Italy

• PREVIOUS POSITIONS

04/05/2011 – 30/12/2011 **Post-Doctoral Fellow in the Discipline of Anatomy (renewal of appointment)**
Department “G.F. Ingrassia”, University of Catania, Italy

04/05/2009 – 03/05/2011 **Post-Doctoral Fellow in the Discipline of Anatomy**
Department “G.F. Ingrassia”, University of Catania, Italy

01/11/2005 – 14/02/2009 **Ph.D. student in Neuropharmacology**
Department of Clinical and Molecular Biomedicine, University of Catania, Italy

• FELLOWSHIPS AND AWARDS

10/02/2015 – 25/03/2015 Recipient of the **International Research Collaborative Award (IRCA)** from the University of Sydney, NSW, Australia – Project “*Regulation of pituitary adenylate cyclase-activating polypeptide (PACAP) and vasoactive intestinal peptide (VIP) expression and release in astrocytes from GFAP-Interleukin-6 and GFAP-Interferon-alpha transgenic mice*” – in collaboration with Prof. Iain L. Campbell (hosting supervisor)

04/05/2011 – 30/12/2011 **Renewal of Post-Doctoral Fellowship contract** received from the Faculty of Medicine and Surgery, School of Medicine – University of Catania, Italy

04/05/2009 – 03/05/2011 **Post-Doctoral Fellowship** received from the Faculty of Medicine and Surgery, School of Medicine – University of Catania, Italy

01/11/2005 – 01/11/2008 **Ph.D. Scholarship** received from “Fondo sostegno giovani” – Ministry of Instruction, University and Research (MIUR), Italy

• SUPERVISION OF POSTGRADUATE / PH.D. STUDENTS

01/02/2013 – present **N. 6** Postgraduate students enrolled in the Master Degree course in Chemistry and Pharmaceutical Technology, University of Catania, Italy

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(Andrea Budonaro, Elisabetta Zammataro, Laura Di Mauro, Simone Sole, Anita Vassalli and Bettina Marano)

Andrea Budonaro – Master Degree Thesis “**Role of PACAP and VIP in the regulation of myelinogenesis markers in rat Schwann-like cells**”

Laura Di Mauro - Master Degree Thesis “**Aluminum chloride exposure increases amyloid beta toxicity in neuroblastoma cells**”

Anita Vassalli – Master Degree Thesis “**Blockade of adenosine receptors A₁ and A_{2A} impedes amyloid beta toxicity in neuroblastoma cells exposed to aluminium chloride**”

Simone Sole - Master Degree Thesis “**Role of MUC1 in apoptotic resilience of human airway epithelial cells exposed to nickel acetate**”

Bettina Marano - Master Degree Thesis “**PACAP is a potent inducer of tissue plasminogen activity in Schwann-like cells**”

Elisabetta Zammataro – Part time involvement – currently suspended

01/10/2014 – present

N. 1 post-doctoral fellow at the Department of Biomedical Sciences and Biotechnologies, University of Catania, Italy

• **TEACHING EXPERIENCE**

12/03/2012 – present date

Lecturer – Gross Anatomy, School of Medicine (Medical Degree Course) (6 CFU) at the University of Catania / Italy

14/03/2014 – present date

Lecturer – Neuroanatomy, Bachelor’s Degree in Physical Activity/ Sport Science (4 CFU) at the University of Catania / Italy

10/02/2013 – present date

Lecturer – Neuroanatomy, Residency in Psychiatry (2 CFU) at the University of Catania / Italy

10/02/2013 – 30/05/2013

Lecturer – Neuroanatomy, Residency in Paediatric NeuroPsychiatry (1 CFU) at the University of Catania / Italy

14/10/2012 – present date

Lecturer – Anatomy and Neuroanatomy, Master Degree course in Chemistry and Pharmaceutical Technologies Residency in Psychiatry (6 CFU) at the University of Catania / Italy

01/12/2012 – present date

Lecturer – Neuroanatomy, Bachelor’s Degree course in Psychiatric Rehabilitation Techniques (School of Medicine) (3 CFU) at the University of Catania / Italy

10/11/2010 – present date

Lecturer – Anatomy and Neuroanatomy, Bachelor’s Degree course in Speech Therapy (School of Medicine) (4 CFU) at the University of Catania / Italy

14/11/2010 – 02/02/2011

Lecturer – Anatomy and Neuroanatomy, Bachelor’s Degree course in Orthoptics (School of Medicine) (4 CFU) at the University of Catania / Italy

01/12/2009 – 05/02/2010

Lecturer – Anatomy and Neuroanatomy, Bachelor’s Degree course in Biological Sciences (6 CFU) at the University of Catania / Italy

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10/12/2008 – 10/01/2009 **Tutor/Demonstrator – Anatomy and Neuroanatomy, Bachelor’s Degree course in Biological Sciences (75 hours) at the University of Catania / Italy**

• **INSTITUTIONAL RESPONSIBILITIES**

31/12/2011 – present date **Assistant Professor / Lecturer (Senior) in the Discipline of Anatomy and Neuroanatomy (tenured position), University of Catania / Italy**

01/12/2012 – present date **Section Advisor during Admission tests in several Degree Courses (Medicine, Physical Activity/Sport Science, Allied Health Professions) at the University of Catania / Italy**

17/10/2012 – 10/07/2013 **Member of the Scientific Advisory Board of the Ph.D. in Neuropharmacology at the University of Catania / Italy**

11/07/2013 – present date **Member of the Scientific Advisory Board of the Ph.D. in Neuroscience (formely Ph.D. in Neuropharmacology) at the University of Catania / Italy**

• **PARTICIPATIONS TO FUNDED RESEARCH PROJECTS**

2013 – 2017 **Participant to the Research Unit of the Industrial Research Project “Development of new biotechnologically active drugs through the modulation of receptor activities” – Funded by the Italian Government in the context of the National Operative Program (PON) (PON 01_02464) PI: Prof. Filippo Drago – Research *Collaborator***

2015 – 2016 **Participant to the Research for the Project “Chondrogenic differentiation of human mesenchymal stem cells from adipose tissue and degenerative processes of the cartilage: expression of aquaporins 1 and 3” – Funded by the University of Catania in the context of the program “Finanziamento Ricerca d’Ateneo” – FIR (CA3778) PI: Prof. Venera Cardile – Research *Collaborator***

2012 – 2015 **Participant to the Research Unit of the Industrial Research Project “Sycilian Technological District For The Development Of Micro-and Nano-Systems S.C.A.R.L.” – Funded by the Italian Government in the context of the National Operative Program (PON) (Hippocrates – PON 02_00355) PI: Assoc./Prof. Velia D’Agata - *Research Collaborator***

2011 – 2014 **Participant to the Research Unit of the Industrial Research Project “Innovative Nanotechnological Platforms For Drug Delivery In Ophtalmology” – Funded by the Italian Government in the context of the National Operative Program (PON) (PON 01_00110) PI: Assoc./Prof. Velia D’Agata – *Research Collaborator***

2012 – 2013 **Participant to the Research Unit in the Research Project “Role**

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Of Pituitary Adenylate Cyclase Activating Peptide (PACAP) In Diabetic Retinopathy” – Funded by the Italian Ministry For University And Research (MIUR) in the context of the program (PRIN 2009) Coordinator: Prof. Filippo Drago - **Research Collaborator**

2009 – 2010

Participant to the Research in the Research Project “Expression of Neurofibromin (NF1) and Amyloid Precursor Protein (APP) in dopamine D3 knockout mice brains in learning processes” – Funded by the University of Catania, Italy – **Postdoctoral participant**

2008 – 2009

Participant to the Research Unit in the Research Project “Pathogenetic Mechanisms of Diabetic Retinopathy: *In Vitro* And *In Vivo* expression of ELAV, PACAP, cPLA2 and cytokines” – Funded by the Italian Ministry For University And Research (MIUR) in the context of the program (PRIN 2007) Coordinator: Prof. Filippo Drago - **Graduate/Ph.D student participant**

2008

Participant to the Research in the Research Project “Effects of Pituitary Adenylate Cyclase-activating Peptide (PACAP) and Vasoactive Intestinal Peptide (VIP) in Schwann Cells and in myelinogenesis” – Funded by the University of Catania, Italy PI: Prof. Maria Luisa Carnazza – **Graduate/Ph.D student participant**

• GRANTS APPLIED FOR

(18 June 2015) (6 months)

Principal Investigator of the Research Project “PACAP distribution in dopamine D3 receptor knockout mice brain: implications in post-traumatic stress disorder” – to be funded by Antibody Resource Company (<http://www.antibodyresource.com/>) to support on going consumable costs of antibodies – Sum requested 10,000\$US

(11 September 2014) (24 months)

Principal Research Fellow in the Research Project of the MARIE SKLODOWSKA-CURIE ACTIONS Individual Fellowships (IF) “AAV-PACAP in MS” – to be funded by the European Union in the context of the call: H2020-MSCA-IF-2014 Coordinator Prof. Filippo Drago – Partner Institution Supervisor Prof. James A. Waschek (UCLA) – Sum requested 176,204€

(10 April 2014) (12 months)

Principal Investigator of the Research Project “Systemic delivery and CNS targeting of PACAP and VIP using novel AAV vectors in animal models of Multiple Sclerosis: myelin recovery and protection from axonopathy and neuron loss” – to be funded by the Italian Multiple Sclerosis Foundation” Co-Participant: Prof. James A. Waschek – UCLA, CA, USA – Sum requested 96,075€

• EDITORIAL BOARD MEMBERSHIPS

03/06/2015 – present date

Associate Editor for the peer-reviewed scientific journal “**MOJ Anatomy & Physiology**”
(<http://medcraveonline.com/MOJAP/editorial-board>)

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01/01/2015 – present date **Editorial Board Member** for the peer-reviewed scientific journal “**Neural Regeneration Research**” (ISSN: Print -1673-5374, Online - 1876-7958) (<http://www.nrronline.org/editorialboard.asp>)

2014 – present date **Editorial Board Member** for the peer-reviewed scientific journal “**Neurotransmitters**” (ISSN: 2375-2440) (<http://www.smartscitech.com/index.php/NT/about/editorialTeam>)

2014 – present date **Editorial Board Member** for the peer-reviewed scientific journal “**Therapeutic Targets for Neurological Diseases**” (ISSN: 2376-0478) (<http://www.smartscitech.com/index.php/TTND/about/editorialTeam>)

• REVIEWER ACTIVITIES

2010 – present date **Reviewer for the following internationally recognized scientific journals** : Brain Research, Behavioral and Brain Functions, Life Sciences, Neuroscience Letters, PLoS ONE, Naunyn-Schmiedeberg's Archives of Pharmacology, Alzheimer's Disease & Parkinsonism, Neuropsychiatric Disease and Treatment, International Journal of Nanomedicine, Neural Regeneration Research, Cell Biochemistry and Function, Toxicology in Vitro, Peptides, Experimental Cell Research, The International Journal of Biochemistry & Cell Biology, Neuroscience

• COMMISSIONS OF TRUST

02/04/2014 – present date **Member of the Scientific Reviewer Board**, Ministero dell'Istruzione, Università e Ricerca (MIUR), Italy

15/11/2014 – 09/02/2015 **Scientific Evaluator for the WHRI-ACADEMY (COFUND Marie Curie) Fellowships (2nd Call)**, William Harvey Research Institute, Barts and The London, Queen Mary's School of Medicine and Dentistry, London, UK

25/03/2015 – present date **Scientific Evaluator for the WHRI-ACADEMY (COFUND Marie Curie) Fellowships (3rd Call)**, William Harvey Research Institute, Barts and The London, Queen Mary's School of Medicine and Dentistry, London, UK

• MEMBERSHIPS TO SCIENTIFIC SOCIETIES

01/09/2010 – present date Member of the Italian Society of Anatomy and Histology (SIAI)

01/11/2008 – present date Member of the Society for Neuroscience (Washington D.C., USA)

• MAJOR COLLABORATIONS

Prof. Filippo Drago, M.D. Ph.D. and Prof. Salvatore Salomone, M.D. Ph.D., studies on the neurochemical basis of addiction : Role of the dopamine D₃ receptor in alcohol consumption and memory function / Department of Biomedical Sciences and Biotechnologies, University of Catania / Italy

A/Prof. Kevin A. Keay, BSc (Hons), Ph.D., studies concerning the potential involvement of PACAP and VIP peptides in the development of neuropathic pain and the possible link with the altered social behaviour in rats after sciatic nerve chronic constriction injury / School of Medical Sciences / Discipline of Anatomy and Histology / Anderson Stuart Building, University of Sydney, NSW / Australia

Prof. Iain L. Campbell, BSc (Hons), Ph.D., studies on the expression and release of PACAP and VIP in mice models with site-targeted overexpression of IL-6 and IFN- α in astrocytes / Faculty of Health Sciences / Department of Molecular Bioscience, University of Sydney, NSW / Australia

Prof. James A. Waschek, Ph.D., studies on the ameliorative role of PACAP and VIP against axonopathy and neuronal degeneration in murine models of Multiple Sclerosis (experimental autoimmune encephalitis and cuprizone-induced CNS demyelination)

A/Prof. Velia D'Agata, M.D. studies on the neuroprotective role of PACAP and VIP in non-neuronal cell lines / Department of Bio-Medical Sciences, University of Catania / Italy

Prof. Dora Reglodi M.D., Ph.D. and Dr. Andreas Tamas M.D., Ph.D., guest editors of the book proposal entitled “**PACAP handbook**” to be published by Springer have currently invited me to participate with a book chapter entitled “**Multiple actions of pituitary adenylate cyclase-activating polypeptide in Schwann cell biology**” / Department of Anatomy / PACAP Research Centre, University of Pecs / Hungary

• **SELECTED PUBLICATIONS (23 from a total of 32 publications)**

1. Marzagalli R, Leggio GM, Bucolo C, Pricoco E, Keay KA, Cardile V, Castorina S, Salomone S, Drago F, **Castorina A**. Genetic blockade of the dopamine D3 receptor enhances hippocampal expression of PACAP and receptors and alters their cortical distribution. *Neuroscience*. (*IN PRESS*)
2. Musumeci G*, **Castorina A***, Magro G, Cardile V, Castorina S, Ribatti D. Enhanced expression of CD31/platelet endothelial cell adhesion molecule 1 (PECAM1) correlates with hypoxia inducible factor-1 alpha (HIF-1 α) in human glioblastoma multiforme. *Exp Cell Res*. 2015;339:407-16.
3. Marzagalli R, Scuderi S, Drago F, Waschek JA, **Castorina A**. Emerging role of PACAP as a new potential therapeutic target in major diabetes complications. *Int J Endocrinol*. 2015;2015:160928.
4. **Castorina A**, Szychlinska MA, Marzagalli R, Musumeci G. Mesenchymal stem cells (MSCs)-based therapy as a potential treatment in neurodegenerative disorders : is the escape from senescence an answer? *Neural Regen Res*. 2015;10:850-8.
5. Musumeci G, Magro G, Cardile V, Coco M, Marzagalli R, Castrogiovanni P, Imbesi R, Graziano ACE, Barone F, Di Rosa M, Castorina S, **Castorina A**. Characterization of matrix metalloproteinase-2 and -9, ADAM-10 and N-cadherin expression in human glioblastoma multiforme. *Cell Tissue Res*. 2015;362:45-60.
6. Giunta S, **Castorina A**, Marzagalli R, Szychlinska MA, Pichler K, Mobasher A, Musumeci G. Ameliorative effects of PACAP against cartilage degeneration. Morphological, immunohistochemical and biochemical evidence from *in vivo* and *in vitro* models of rat osteoarthritis. *Int J Mol Sci*. 2015;16:5922-44.
7. Marzagalli R, **Castorina A**. The seeming paradox of adenosine receptors as targets for the treatment of Alzheimer's disease : agonists or antagonists? *Neural Regen Res*. 2015;10:205-7.
8. **Castorina A**, Waschek JA, Marzagalli R, Cardile V, Drago F. PACAP Interacts with PAC1 Receptors to Induce Tissue Plasminogen Activator (tPA) Expression and Activity in Schwann Cell-Like Cultures. *PLoS One*. 2015;10:e0117799.

9. Giunta S, Andriolo V, **Castorina A**. Dual blockade of the A₁ and A_{2A} adenosine receptor prevents amyloid beta toxicity in neuroblastoma cells exposed to aluminum chloride. *Int J Biochem Cell Biol*. 2014;54:122-36.
10. **Castorina A**, Giunta S. Mucin 1 (MUC1) signalling contributes to increase the resistance to cell death in human bronchial epithelial cells exposed to nickel acetate. *Biometals*. 2014;27:1149-58.
11. Leggio GM, Camillieri G, Platania CB, **Castorina A**, Marrazzo G, Torrisi SA, Nona CN, D'Agata V, Nobrega J, Stark H, Bucolo C, Le Foll B, Drago F, Salomone S. Dopamine D3 receptor is necessary for ethanol consumption: an approach with bupirone. *Neuropsychopharmacology*. 2014;39:2017-28.
12. **Castorina A**, Scuderi S, D'Amico AG, Drago F, D'Agata V. PACAP and VIP increase the expression of myelin-related proteins in rat schwannoma cells: involvement of PAC1/VPAC2 receptor-mediated activation of PI3K/Akt signaling pathways. *Exp Cell Res*. 2014;322:108-21.
13. **Castorina A**, D'Amico AG, Scuderi S, Leggio GM, Drago F, D'Agata V. Dopamine D3 receptor deletion increases tissue plasminogen activator (tPA) activity in prefrontal cortex and hippocampus. *Neuroscience*. 2013;250:546-56.
14. Scuderi S, D'Amico AG, **Castorina A**, Imbesi R, Carnazza ML, D'Agata V. Ameliorative effect of PACAP and VIP against increased permeability in a model of outer blood retinal barrier dysfunction. *Peptides*. 2013;39:119-24.
15. Giunta S, **Castorina A**, Bucolo C, Magro G, Drago F, D'Agata V. Early changes in pituitary adenylate cyclase-activating peptide, vasoactive intestinal peptide and related receptors expression in retina of streptozotocin-induced diabetic rats. *Peptides*. 2012;37:32-9.
16. **Castorina A**, Giunta S, Scuderi S, D'Agata V. Involvement of PACAP/ADNP signaling in the resistance to cell death in malignant peripheral nerve sheath tumor (MPNST) cells. *J Mol Neurosci*. 2012;48:674-83.
17. **Castorina A**, Leggio GM, Giunta S, Magro G, Scapagnini G, Drago F, D'Agata V. Neurofibromin and amyloid precursor protein expression in dopamine D3 receptor knock-out mice brains. *Neurochem Res*. 2011;36:426-34.
18. **Castorina A**, Giunta S, D'Agata V. Protective effect of the dopamine D(3) receptor agonist (7-OH-PIPAT) against apoptosis in malignant peripheral nerve sheath tumor (MPNST) cells. *Int J Oncol*. 2010;37:927-34.
19. **Castorina A**, Giunta S, Mazzone V, Cardile V, D'Agata V. Effects of PACAP and VIP on hyperglycemia-induced proliferation in murine microvascular endothelial cells. *Peptides*. 2010;31:2276-83.
20. **Castorina A**, Tiralongo A, Giunta S, Carnazza ML, Scapagnini G, D'Agata V. Early effects of aluminum chloride on beta-secretase mRNA expression in a neuronal model of beta-amyloid toxicity. *Cell Biol Toxicol*. 2010;26:367-77.
21. Giunta S, **Castorina A**, Adorno A, Mazzone V, Carnazza ML, D'Agata V. PACAP and VIP affect NF1 expression in rat malignant peripheral nerve sheath tumor (MPNST) cells. *Neuropeptides*. 2010;44:45-51.
22. **Castorina A**, Tiralongo A, Giunta S, Carnazza ML, Rasi G, D'Agata V. PACAP and VIP prevent apoptosis in schwannoma cells. *Brain Res*. 2008;1241:29-35.
23. **Castorina A**, Tiralongo A, Cavallo D, Loreto C, Carnazza ML, Iavicoli S, D'Agata V. Expression profile of ErbB receptor's family in human alveolar type 2-like cell line A549 exposed to hexavalent chromium. *Toxicol In Vitro*. 2008;22:541-7.

* : Equally contributing authors

A total of N° 31 proceedings/posters/invited lectures to National and International meetings (Please refer to Publication Record for the complete list)