




# Ashley Novais

 Braga, Portugal

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## EDUCATION

### University of Minho (Portugal)

**Ph.D.** in Health Sciences, (1<sup>st</sup> edition of the inter-university PhD program “PhDOC”) *December 2013*  
Dissertation: “Unraveling the role of neudesin in the central nervous system”.

Dissertation advisor: João Carlos Sousa, Ph.D.

### M.Sc.

 in Molecular Genetics, *December 2009*

Master’s Thesis: “Establishment and characterization of *in vivo* models of glial tumors”.

Dissertation advisor: Rui Manuel Reis, Ph.D.

### B.S.

 Applied Biology, *September 2007*

### University of Porto (Portugal)

Post-graduation in Forensic Sciences, *September 2008*

### TecMinho

Post-graduation in Project Management *September 2017 - Present*

### Training Programme in Pharmaceutical Medicine (Portugal)

Clinical investigator certificate (CLIC), *August 2017*

### Direção Geral de Veterinária (Portugal)

Felasa C certificate in Laboratory Animal Science, *September 2008*

## RESEARCH EXPERIENCE

### INL, Braga, Portugal

*Sep 2017 - Present*

*Research Fellow*

**Project:** Implantable systems for multimodal theranostics.

Improve configuration, geometry and bio-compatibility of implantable microelectrodes and sensors for the monitoring of neurologic activity.

### Wavemetrix, London, UK

Jan 2017-September 2017

*Research analyst*

Freelance research analyst in media opinion.

ICVS, Portugal - INSERM, Paris, France - NeuroSpin-CEA, Saclay, France  
2014-2016

*Researcher*

*In vivo, ex vivo* and spectroscopy and functional MRI data correlation with corticosterone levels and behavior scores of rats exposed to chronic stress.

### Depart. Pharmacology, University of Athens, Greece

2012

*PhD student*

Training in HPLC technique for the quantification of monoamines and aminoacids in mouse brain samples.

### ICVS, University of Minho, Portugal

2010-2013

*PhD student*

**Project:** Neudesin - characterization of a novel neurotrophic factor.

## AWARDS & HONOURS

Travel Grant from IBRO for the "Society for Neuroscience", November 11th to 17th 2016, San Diego, USA.

In Europe Short Stay award from IBRO. To join the lab of Sebastian Meriaux, at Neurospin, Saclay, France, 2015.

Best poster in the "international meeting of Steroids in the Nervous system" February 14<sup>th</sup> to 18<sup>th</sup> 2015, Torino, Italy.

Travel Grant for the "International Meeting Steroids and Nervous System" February 14<sup>th</sup> to 18<sup>th</sup> 2015, Torino, Italy.

Travel Grant for the "Optogenetics symposium" in May 3<sup>th</sup>, 2014, Oxford, UK.

## SKILLS & ACTIVITY

### Research skills:

Animal models: Mouse knockout colony management. Rodent handling. Mouse and rat behavioral assessment of emotional and cognitive dimensions. Determination of embryonic timepoints. Vaginal smears collection and estrous cycle evaluation. Acute and chronic stress paradigms. Intra-peritoneal, sub-cutaneous injections and drug preparation. Blood collection by tail venipuncture. Cardiac perfusion, organ collection. Rat stereotaxic cannulas implantation.

Cellular and molecular biology: Frozen brain section immunohistochemistry and paraffin included tissue immunohistochemistry. Confocal, fluorescence, stereological and neuron morphometric (Golgi-cox staining) microscopy. RNA extraction from small amounts or normal amounts of tissue. Gene Expression by qPCR. Competitive immunoassay (ELISA) quantification. BrdU labeling protocols. DNA cloning with plasmid vectors.

Other techniques: Monoamines and aminoacids quantification by high-performance liquid chromatography (HPLC). Chick Chorioallantoic Membrane assay. Cell line culture management. Primary cultures of rat hippocampal neurospheres. Primary cultures of rodent astrocytes.

### Transferable skills:

Written & Oral Communication; Research & Information Management; Project Management & Organization; Analysis & Problem-Solving; Interpersonal & Leadership Skills; Self-Management & Work Habits.

### Tutorial skills:

Teaching assistant in the hands-on laboratory sessions of the "The fundamentals in neuroscience" course, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup> and 9<sup>th</sup> editions. ICVS-3B's. University of Minho. Braga, on 2012-16.

Co-supervision of several medical students in summer lab rotations and master thesis work.

**Technical skills:**

MS office (Word, Excel, Powerpoint) & Endnote	Excellent
GraphPad Prism & SPSS	Excellent
Illustrator & Photoshop & AutoCad	Solid
MatLab	Beginner

**Organization skills:**

Participation in the yearly “ICVS open door’s day” to the community;  
Staff of the 5<sup>th</sup> edition SINAL, Braga 2010

**RESEARCH PROJECTS**

*Norte2020 Regional Operational program:* “Frontiers of technology for theranostics of cancer, metabolic and neurodegenerative diseases”. Active team member.

*FCT Scientific research project Grant:* "Adaptive and maladaptive response to stress: longitudinal characterization in brain imaging and molecular correlates". Active team member.

*Bial pharmaceuticals grant:* "Temporal modulation of the subventricular zone neural stem cell niche by choroid plexus cerebral spinal fluid derived factors". Team member.

*FCT Scientific research project Grant:* "Characterization of neudesin, a novel neurotrophic factor". Project management and active team member.

**ADVANCED COURSES**

Advanced Course: “European college of Neuropsychopharmacology - ECNP Seminar Greece 2012” - ECNP Seminar, Nafplion, Greece - November 2012

Post-Graduate course: “ Regenerative Medicine” Center for Neuroscience and Cell Biology, Faculty of Medicine, University of Coimbra, Coimbra, Portugal – May 2010

Post-Graduate course: “Cell Damage and Repair”- Centre of Ophthalmology-University of Coimbra, Biomedical Institute for Research in Light and Image, Coimbra, Portugal– May 2010

Post-Graduate course “An integrative approach to cell analysis” - Life and Health Sciences Research Institute (ICVS), University of Minho. Braga, Portugal, August – March, 2010

Post-Graduate course “Host and pathogen interaction” -Life and Health Sciences Research Institute (ICVS), University of Minho. Braga, Portugal, August – March 2010

Post-Graduate course: “Molecular oncology” – Portuguese Institute of Oncology, IPOLFG, EPE, Lisbon, Portugal– February 2010

Post-Graduate course: “Chronic inflammation and immunomodulation advanced course “ - Faculty of Medical Sciences, Chronic Diseases Research Center, Lisbon, Portugal – February 2010

Post-Graduate course “Research methodologies” - Life and Health Sciences Research Institute (ICVS), University of Minho. Braga, Portugal, August – December 2009

Post-Graduate course “Bioinformatics in health sciences” - Life and Health Sciences Research Institute (ICVS), University of Minho. Braga, Portugal, August – November 2009

Post-Graduate course “Fundamentals of genetics, development and neoplasia” - Life and Health Sciences Research Institute (ICVS), University of Minho. Braga, Portugal, August – October 2009

Post-Graduate course “Fundamentals in neuroscience” - Life and Health Sciences Research Institute (ICVS), University of Minho. Braga, Portugal, August – September 2009

## PUBLICATIONS & PRESENTATIONS

### Papers:

Magalhães R, Barrière DA, **Novais A**, Marques F, Marques P, Cerqueira JJ, Sousa JC, Cachia A, Boumezbear F, Bottlaender M, Mériaux S, Jay TM and Sousa N, The dynamics of stress: a longitudinal MRI study of brain structure and connectome. *Accepted in Molecular Psychiatry. Impact factor: 13,314*

Ferreira AC, Santos T, Sampaio-Marques B, **Novais A**, Mesquita SD, Ludovico P, Bernardino L, Correia-Neves M, Sousa N, Palha JA, Sousa JC and Marques F, Lipocalin-2 regulates adult neurogenesis and contextual discriminative behaviours. *Accepted in Molecular Psychiatry. Impact factor: 13,314*

Luis R. Jacinto, Rui Mata, **Ashley Novais**, Fernanda Marques and Nuno Sousa, The habenula as a critical node in chronic stress-related anxiety. *Experimental Neurology* (2016) doi: 10.1016/j.expneurol.2016.12.003. *Impact factor: 4,706*

**Novais A**, Monteiro S, Roque S, Correia-Neves M and Sousa N, How age, sex and genotype shape the stress response. *Neurobiology of stress* (2016). doi: 10.1016/j.ynstr.2016.11.004

Castanho TC, Moreira PS, Portugal-Nunes C, **Novais A**, Costa PS, Palha JA, Sousa N, and Santos NC, The role of sex and sex-related hormones in cognition, mood and well-being in older men and women. *Biological psychology* (2014) 103C 158-166. doi: 10.1016/j.biopsycho.2014.08.015. *Impact factor: 3,2*

**Novais A**, Ferreira AC, Marques F, Pêgo JM, Cerqueira JJ, David-Pereira A, Campos FL, Dalla C, Kokras N, Sousa N, Palha JA, Sousa JC Neudesin is involved in anxiety behavior: structural and neurochemical correlates. *Front. Behav. Neurosc.* (2013) 7:119. doi: 10.3389/fnbeh.2013.00119. *Impact factor: 3,104*

Ferreira AC, Pinto V, Dá Mesquita S, **Novais A**, Sousa JC, Correia-Neves M, Sousa N, Palha JA, Marques F Lipocalin-2 is involved in emotional behaviors and cognitive function. *Front. Cell. Neurosci.* (2013) 7:122. doi: 10.3389/fncel.2013.00122. *Impact factor: 4,555*

Falcão AM, Marques F, **Novais A**, Sousa N, Palha JA and Sousa JC The path from the choroid plexus to the subventricular zone: go with the flow! *Front. Cell. Neurosci.* (2012) 6:34. doi: 10.3389/fncel.2012.00034. *Impact factor: 4,555*

*Cumulative impact factor: 33,434*

### Oral communications:

Invited speaker at “Experimental & Translational Medicine Seminar”, October 14<sup>th</sup>, Ninewells Hospital & Medical School, Dundee, UK.

"The role of neudesin in the brain: implication in anxiety." Selected for oral communication at the XIII Annual Meeting of the Portuguese Society for Neuroscience, 30<sup>th</sup> of May to 1<sup>st</sup> of June of 2013, Luso, Portugal.

### Posters:

**Novais A**, Ferreira AC, Marques F, Sousa N, Palha JA and Sousa JC. Dimorphic modulation of membrane-associated progesterone receptor neudesin in adult hippocampal neurogenesis. Society for Neuroscience (SfN), November 11<sup>th</sup> to 17<sup>th</sup>, 2016, San Diego, USA.

**Novais A**, Ferreira AC, Palha JA, Sousa N, Marques F and Sousa JC. Neudesin is involved in the regulation of the adult hippocampal neurogenesis. NeuroConferences, December 2<sup>nd</sup> and 3<sup>th</sup>, 2015, Braga, Portugal.

Boumezbear F, Magalhães R, **Novais A**, Mériaux S, Bottlaender M, Cachia A, Jay T and Sousa N. Assessment of Stress-induced Neurochemical Alterations in a Rat Model of Chronic Stress using *in vivo* <sup>1</sup>H MRS at 11.7 Tesla. 23<sup>rd</sup> Annual Meeting of the international society for magnetic resonance in Medcare, May 30<sup>th</sup> – June 5<sup>th</sup>, 2015, Toronto, Canada.

**Novais A**, Ferreira AC, Palha JA, Sousa N, Marques F and Sousa JC. Neudesin is involved in the regulation of the adult hippocampal neurogenesis – a link between progesterone and anxiety?. XIV Annual Meeting of the Portuguese Society for Neuroscience, June 4<sup>th</sup> and 5<sup>th</sup>, 2015, Porto, Portugal.

**Novais A**, Ferreira AC, Palha JA, Sousa N, Marques F and Sousa JC. Neudesin is involved in the regulation of the adult hippocampal neurogenesis - a link between progesterone and anxiety?. 8th international meeting steroids and nervous system, February 14<sup>th</sup> to 18<sup>th</sup>, 2015, Torino, Italy

**Novais A**, Ferreira AC, Marques F, Pego JM, Cerqueira JJ, Pereira AD, Campos FL, Dalla C, Kokras N, Sousa N, Palha JA, Sousa JC. The role of neudesin in the brain: implication in anxiety. XIII Annual Meeting of the Portuguese Society for Neuroscience, May 30<sup>th</sup> to June 1<sup>st</sup>, 2013, Luso, Portugal.

**Novais A**, Ferreira AC, Marques F, Sousa N, Palha JA, Sousa JC. Neudesin, a putative neurotrophic factor, ablation impacts on post-natal developmental milestones. Society for Neurosciences (SFN), October 13<sup>th</sup> to 17<sup>th</sup>, 2012. New Orleans, USA.

## REFERENCES

**Joao C Sousa**  
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**Sébastien Meriaux**  
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