JEROME BONNEFONT

PERSONAL/CONTACT INFORMATIONS

Date of Birth: October 24th, 1977, in Clermont-Ferrand, France
Nationality: French
Address: Dept. of Neurosciences, University of Mons, Pentagon building, Wing 1A**,** 8, avenue du Champ de Mars, 7000 MONS
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languages: French (mother tongue), English (fluent)
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EDUCATION

2004 - PhD in Neuropharmacology (summa cum laude)
School of Medicine, Université Clermont-Ferrand I, France.

2000 - Master in Molecular and Cellular Pharmacology (magna cum laude)
Université Paul Sabatier, Toulouse, France.

1999 - BSc (Hons) in Physiology & Pharmacology (1st class degree, ranked 2nd in class)
The Nottingham Trent University, Nottingham, United Kingdom.

1997 - University Diploma in Technology (Applied Biology)
University Institute of Technology, Université Clermont-Ferrand I, France.

SCIENTIFIC CAREER

05/2025 - now
Research Associate - group leader "Brain Evo-Devo and Disease", Department of Neurosciences, School of Medicine, Pharmacy and Life Sciences, University of MONS, Belgium.

10/2021 - now
Lecturer, School of Medicine, Université Libre de Bruxelles, Belgium.

03/2024 to 04/2025
Research Associate – Head of the Research Office, ULB Health Hub, Université Libre de Bruxelles, Belgium.

09/2023 to 04/2025
Visiting Research Scientist, Department of Neurosciences, School of Medicine and Pharmacy, University of MONS, Belgium.

10/2013 to 08/2023
Research Associate, P. Vanderhaeghen lab of Stem Cells and Developmental Biology, Université Libre de Bruxelles, Belgium.

03/2018 to 12/2022
Visiting Research Scientist, VIB-KU Leuven Center for Brain & Disease Research, KU Leuven Department of Neurosciences, Leuven Brain Institute, Belgium.

08/2009 to 09/2013
Senior Post-doctoral Fellow, P. Vanderhaeghen lab of Stem Cells and Developmental Biology, Université Libre de Bruxelles, Belgium.

04/2005 to 07/2009
Junior Post-doctoral Fellow, K.H. Krause lab of Biology of Ageing, University of Geneva, Switzerland and C. Dehay lab "Building the Cerebral Cortex", INSERM U1208, Stem Cell & Brain Research Institute, Lyon, France.

10/2000 to 10/2004
PhD Thesis, A. Eschalier lab of Neuropharmacology of Pain, INSERM U1107, Université Clermont Auvergne, France.

CV

09/1999 to 07/2000
Master Thesis, J.M. Zajac lab of Neurobiology of opioids and anti-opioids, CNRS UMR 5089, Université Paul Sabatier, Toulouse, France.

Additional trainings or collaborations as a visiting research scientist

F. Guillemot lab of Neural Stem Cell Biology, National Institute for Medical Research, London, UK (04/2015).
S. Aerts lab of Computational Biology, VIB-KU Leuven, Belgium (12/2014).
N.K. Robakis lab of Alzheimer's Disease Research, Icahn School of Medicine, Mount Sinai, NYC, USA (01 to 03/2005).
A.I. Basbaum lab of Pain Research, University of California, San Francisco, USA (03 to 08/2004).

PRIZES AND FELLOWSHIPS

Raoul Warocqué Foundation grant as Principal Investigator (2025)
ULB-UNIL partnership Research Grant as Principal Investigator (11/2021-12/2023)
ULB post-doc fellowship (08/2009-12/2011)
Scholarship from the Department of Public Education, Canton of Geneva (03/2006 to 09/2008)
Post-doctoral Grant of Excellency from Auvergne Regional Council (2005)
Bristol-Myers-Squibb CIFRE PhD Fellowship (10/2001 to 10/2004)
Association Claude-Bernard Paris PhD Grant (2000)
Master Scholarship of Excellency from the French Ministry of Education (09/1999)

TEACHING EXPERIENCE

Academic year 2024/25 - now
Lecture in Neurobiology (6 h/year), Executive Master in Neuropsychiatry & Psychogeriatrics
Faculty of Medicine, ULB, Belgium - Faculty of Medicine, Pharmacy and Biomedical Sciences, UMONS, Belgium

Academic year 2021/22 - now
Lecture in Neurosciences (34 h/year), Master in Biomedical Sciences
MEDI-G4404: Neurological disorders (Neurodegenerative and Neurodevelopmental diseases)
Faculty of Medicine, ULB, Belgium.

Academic years 2002/03 to 2003/04
Tutorial Activities (24 h/year) in Bioinformatics
University Institute of Technology (Applied Biology), Université Clermont-Ferrand I, France.

Academic years 2001/02 to 2003/04
Practical Activities (24 h/year) in Physiology
University Institute of Technology (Applied Biology), Université Clermont-Ferrand I, France.

SUPERVISION OF JUNIOR RESEARCHERS

2 PhD students (co-supervision), **2 Master Students, 2 BSc Students, 7 Rotations**

PUBLICATIONS IN PEER-REVIEWED JOURNALS (selected)

H-index: 18, total citations: ~2400, source citations: Google Scholar, source 2-year IF: JCR 2022

20. Cheron J, Beccari L, Hagué P, Icick R, Despontin C, Carusone T, Defrance M, Bhogaraju S, Martin-Garcia E, Capellan R, Maldonado R, Vorspan F, **Bonnefont J** & de Kerchove d'Exaerde A. USP7/Maged1-Mediated H2A Monoubiquitination in the Paraventricular Thalamus: An Epigenetic Mechanism Involved in Cocaine Use Disorder. **Nat Commun.**, 14(1):8481, 2023.
IF: 17.694.

19. Van Heurck R*, **Bonnefont J***, Wojno M, Suzuki IK, Velez Bravo FD, Erkol E, Truc Nguyen D, Herpoel A, Bilheu A, Ledent C & Vanderhaeghen P. CROCCP2 acts as a human-specific modifier of cilia dynamics and mTOR signalling to promote expansion of cortical progenitors. **Neuron**, 111:65-80.e6, 2023.
IF: 18.688. * *Equal contribution*

18. Wiegreffe C, Wahl T, Joos N, **Bonnefont J**, Liu P & Britsch S. Developmental cell death of cortical projection neurons is controlled by a Bcl11a/Bcl6-dependent pathway. **EMBO Reports**, 23: e54104, 2022.
IF: 9.071.

17. Bonnefont J* & Vanderhaghen P. Neuronal fate acquisition and specification: time for a change. **Curr Opin Neurobiol**, 66: 195-204, 2021.
IF: 7.070. ** Corresponding author*

16. Bonnefont J, Tiberi L, van den Ameele J, Potier D, Gaber ZB, Lin X, Bilheu A, Herpoel A, Velez Bravo FD, Guillemot F, Aerts S & Vanderhaeghen P. Cortical neurogenesis requires Bcl6-mediated transcriptional repression of multiple self-renewal-promoting extrinsic pathways. **Neuron**, 103: 1096-1108, 2019.
IF: 18.688.

15. Espuny-Camacho I, Arranz AM, Fiers M, Snellinx A, Ando K, Munck S, **Bonnefont J**, Lambot L, Corthout N, Omodho L, Vanden Eynden E, Radaelli E, Tesseur I, Wray S, Ebneth A, Hardy J, Leroy K, Brion JP, Vanderhaeghen P & De Strooper B. Hallmarks of Alzheimer's disease in stem cell-derived human neurons transplanted into mouse brain. **Neuron** 93:1-16, 2017.
IF: 18.688. *Comment in Nat Rev Neurol 2017, Sci Transl Med. 2017, Nat Rev Neurosci. 2017*

14. Tiberi L, **Bonnefont J**, van den Ameele J, Le Bon SD, Herpoel A, Bilheu A, Baron BW & Vanderhaeghen P. A BCL6/Bcor/Sirt1 complex triggers neurogenesis and suppresses medulloblastoma by repressing Sonic Hedgehog signalling. **Cancer Cell** 26:797-812, 2014.
IF: 38.585. *Featured article highlighted by a preview in Cancer Cell*

13. Espuny-Camacho I, Michelsen KA, Gall D, Linaro D, Hasche A, **Bonnefont J**, Bali C, Orduz D, Bilheu A, Herpoel A, Lambert N, Gaspard N, Péron S, Schiffmann SN, Giugliano M, Gaillard A & Vanderhaeghen P. Pyramidal Neurons Derived from Human Pluripotent Stem Cells Integrate Efficiently into Mouse Brain Circuits In Vivo. **Neuron** 77:440-56, 2013.
IF: 18.688. *Highlighted by a preview in Neuron*

12. Tiberi L, van den Ameele J, Dimidschstein J, Piccirilli J, Gall D, Herpoel A, Bilheu A, **Bonnefont J**, Iacovino M, Kyba M, Bouschet T & Vanderhaeghen P. Bcl6 controls neurogenesis through Sirt1-dependent epigenetic repression of selective Notch targets. **Nat Neurosci.** 15:1627-35, 2012.
IF: 28.771.

11. Bonnefont J, Laforge T, Plastre O, Beck B, Sorce S, Dehay C & Krause K-H. The primate-specific RFPL1 gene controls cell-cycle progression via cyclin B1/Cdc2 degradation. **Cell Death Differ** 18:293-303, 2011.
IF: 12.067.

10. Sorce S, **Bonnefont J**, Julien S, Lin-Marq N, Rodriguez I, Dubois-Dauphin M & Krause K-H. Increased brain damage after ischemic stroke in chemokine receptor CCR5-deficient mice. **Br J Pharmacol** 160:311-21, 2010.
IF: 9.473.

9. Bedard K, Attar H, **Bonnefont J**, Jaquet V, Borel C, Plastre O, Stasia M-J, Antonarakis SE & Krause K-H. Three common polymorphisms in the CYBA gene form a haplotype associated with decreased ROS generation. **Hum. Mutat.** 30:1123-33, 2009.
IF: 4.700.

8. Bonnefont J*, Nikolaev SI, Perrier AL, Guo S, Cartier L, Sorce S, Laforge T, Aubry L, Khaitovich P, Peschanski M, Antonarakis SE & Krause K-H. Evolution forces shape the human RFPL1,2,3 genes toward a role in neocortex development. **Am. J. Hum. Genet.** 83:208-18, 2008.
IF: 11.043. ** Corresponding author*

7. Mallet C, Daulhac L, **Bonnefont J**, Ledent C, Etienne M, Chapuy E, Libert F & Eschalier A. Endocannabinoid and serotonergic systems are needed for acetaminophen-induced analgesia. **Pain** 139:190-200, 2008.
IF: 7.926.

6. Bonnefont J, Daulhac L, Etienne M, Chapuy E, Mallet C, Ouchchane L, Deval C, Courade J-P, Ferrara M, Eschalier A & Clottes E. Acetaminophen recruits spinal p42/p44 MAPKs and GH/IGF-1 receptors to produce analgesia via the serotonergic system. **Mol. Pharmacol.** 71: 1-9, 2007.
IF: 4.054.

5. Bonnefont J, Chapuy E, Clottes E, Alloui A & Eschalier A. Spinal 5-HT_{1A} receptors differentially influence nociceptive processing according to the nature of the noxious stimulus in rats: influence on the antinociceptive activity of paracetamol, venlafaxine and 5-HT. **Pain** 114: 482-90, 2005.
IF: 7.926.

4. Rossignol F, de Laplanche E, Mounier R, **Bonnefont J**, Cayre A, Godinot C, Simonnet H & Clottes E. Natural antisense transcripts of HIF-1α are conserved in rodents: in vivo and ex vivo expression and regulation by hypoxia. **Gene** 339: 121-130, 2004.
IF: 3.913.

3. Libert F, **Bonnefont J**, Bourinet E, Doucet E, Alloui A, Hamon M, Nargeot J & Eschalier A. Acetaminophen: a central analgesic drug which involves a spinal tropisetron-sensitive, non 5-HT_3, receptor-mediated effect. **Mol. Pharmacol.** 66: 728-34, 2004.
IF: 4.054.

2. Bonnefont J, Alloui A, Chapuy E, Clottes E & Eschalier A. Orally administered paracetamol does not act locally in the rat formalin test: evidence for a supraspinal, serotonin-dependent antinociceptive mechanism. **Anesthesiology** 99: 976-81, 2003.
IF: 8.986.

1. Bonnefont J*, Courade J-P, Alloui A & Eschalier A. Mechanism of the antinociceptive effect of paracetamol. **Drugs** Special Issue 2: 1-4, 2003.
IF: 11.431. * *Corresponding author*

ORAL PRESENTATIONS

Selected Speaker at International Congress

- Belgian Society for Cell and Developmental Biology, Spring Meeting, “Neural Stem Cells and Cortex Development”, Liege, Belgium. June 8, 2018

Invited Speaker

- Namur Research Institute for Life Sciences, University of Namur, Belgium. Nov 25, 2022
- VIB Center for Brain and Disease Research, KUL, Leuven, Belgium. Feb 25, 2020
- WiBrain winter meeting 2015, Brussels, Belgium. Dec 4, 2015
- Faculty of Medicine, Université Libre de Bruxelles, Brussels, Belgium. February 20th, 2009
- Brain Mind Institute, EPFL, Lausanne, Switzerland. Jan 30, 2009
- Faculty of Medicine, Université Clermont Auvergne, Clermont-Ferrand, France. March 27th, 2008
- National Institute for Medical Research - Mill Hill, London, UK. March 25, 2008
- Stem cell and Brain Research Institute, INSERM U846, Lyon, France. March 7, 2008

SCIENTIFIC ACTIVITIES

Posters presented at International Congresses

- 21st Biennial Meeting of the International Society for Developmental Neuroscience (Antibes, France 2016)
- Belgian Society for Cell and Developmental Biology, Spring Meeting (Liege, Belgium 2015)
- 9th FENS Forum, Federation of European Neuroscience Societies (Milan, Italy 2014)
- 6th FENS Forum, Federation of European Neuroscience Societies (Geneva, Switzerland 2008)
- 2nd annual meeting of the NeuroNE Consortium (Barcelona, Spain 2007)
- 11th World Congress on Pain (Sidney, Australia 2005)
- 34th Annual Meeting, Society for Neuroscience Meeting (San Diego, USA 2004)
- Pain in Europe IV, European Federation of IASP Chapters (Prague, Czech Republic 2003)
- Special FEBS Meeting on Signal Transduction, Federation of European Biochemistry Societies (Brussels, Belgium 2003)
- 6th Annual Meeting of the French Society of Pharmacology (Rennes, France 2002)
- 1st Congress of French Society for the Study and Treatment of Pain (Paris, France 2001)

Scientific organization Membership (current)

- Federation of European Neuroscience Societies, Belgian Society for Neuroscience, Belgian Society for Cell and Developmental Biology

Reviewing activities

Journal reviewer: Anesthesia and Analgesia, European Neuropsychopharmacology, Journal of Advanced Research, The FASEB Journal, PLoS One.
Grant reviewer: FNRS McKinsey & Company Scientific Award

INSTITUTIONAL RESPONSABILITIES

Academic year 2025/26 – now
- Focus group member for the internal evaluation of the ULB Biomedical Sciences teaching program
- Academic coordinator for ULB x pharma.be microcertification in (bio-)pharma sector

Academic year 2023/24 – now
- Task force member for creation of a UMONS transdisciplinary Institute on Neurodevelopmental Disorders

Academic year 2022/23 – now
Member of 1 Doctoral advisory committee (Faculty of Medicine, ULB)
Examiner of 3 Master theses (Faculty of Medicine, ULB)

Academic years 2023/24 (Semester 2) and 2024/25 (Semester 1)
- Initiator and Lead of the Research Office at ULB Health Hub bringing together the Faculties of Medicine, Pharmacy, Human Motor Sciences, the School of Public Health, the Brussels University Hospitals, and the Health Department of the Ilya Prigogine Higher Education Institution.
Creation and management for the ULB Health Ecosystem of i/ a research valorization service, ii/ a funding application service, iii/ an interfaculty and multidisciplinary PhD Day, and iv/ an interfaculty and interdisciplinary "Meet Your Scientific Neighbor" seminar series; sponsorship acquisition for scientific events; establishment of relationships with pharma industry representatives via Brussels South Charleroi BioPark and pharma.be; co-organization of the "BioPark Student Day 2025".

Academic years 2019/20 to 2022/23
Elected to the board of ULB Interdisciplinary Research Institute

Academic year 2020/21
Organization/Invitation of guest speakers at the ULB Interdisciplinary Research Institute seminar series

Academic year 2008/09
External reviewer for 3 doctoral advisory committees (Stem Cell & Brain Research Institute, INSERM, Université de Lyon I, France)
Academic year 2007/08
Co-organizer of Prof. Ruiz i Altaba's "Stem Cell *Soirées*" seminar series,
Joint Faculties of Medicine and Sciences, University of Geneva.

Academic year 1998/99
Student Representative, Department of Life Sciences, The Nottingham Trent University.

OTHER

Entitled to perform and direct animal experiments in rodents in EU.

Teaching trainings with ULB educational support center:
- New methods and technologies for teaching (triple concordance, inverted class, wooclap tool, hybrid teaching)
- Basics of generative AI for teaching
- Use of the Moodle teaching platform & the Wooflash educational tool based on AI and the principles of neuroeducation.

RESEARCH PROJECTS OVER THE LAST 5 YEARS

Over the past five years, my research has focused on the fundamental mechanisms of neurogenesis, specifically the generation of neural cells in the developing embryonic brain cortex. In the embryonic mouse cortex, I uncovered a molecular logic of neurogenesis where the intrinsic factor Bcl6 insulates progenitors from extrinsic proliferative cues through transcriptional repression at multiple levels, ensuring irreversible neurogenic fate transition. Utilizing transcriptomic and epigenomic approaches, in vivo functional analyses with transgenic mice, in utero electroporation, and various histological techniques, I have provided significant insights into these processes.

My work led to an invitation to write a review in the prestigious journal *Current Opinion in Neurobiology* and to collaborate with the Britsch lab at Ulm University, Germany. Together, we revealed an unexpected role of Bcl6 during a critical postnatal checkpoint controlling neuronal survival and maturation, essential for establishing neuronal circuitry. These findings offered profound implications for understanding neurogenesis and its impact on brain development and function.

Publications related to this research:

Cortical neurogenesis requires Bcl6-mediated transcriptional repression of multiple self-renewal-promoting extrinsic pathways. **Neuron**, 2019.

Neuronal fate acquisition and specification: time for a change. **Curr Opin Neurobiol**, 2021.

Developmental cell death of cortical projection neurons is controlled by a Bcl11a/Bcl6-dependent pathway. **EMBO Reports**, 2022.

My research also focused on the unique features of human cortical development, building on previous work with the primate-specific RFPL1-3 gene family (cf. publications in Am. J. Hum. Genet. 2008 and Cell Death Differ 2011).

The complexity of the human brain, driven by the increase in brain cell diversity, has significantly enhanced our cognitive abilities, largely through the emergence of 'hominid-specific' genes crucial for brain formation. We discovered that the *CROOCP2* gene, resulting from a gene duplication and previously thought inactive, is highly expressed in the human fetal brain but not in other primates. Notably by using advanced organoid technology, we observed that CROCCP2 significantly increased the number of human cortical progenitors, by enhancing the generation of specific brain stem cells through the mTor pathway. These cellular and molecular mechanisms are fundamental to the expansion of human cortical size and complexity and are tightly linked to autism spectrum disorders and specific brain tumors predominantly affecting our species. Thus, our findings provided critical insights into human brain evolution and its susceptibility to certain diseases.

Publication related to this research:

CROCCP2 acts as a human-specific modifier of cilia dynamics and mTOR signalling to promote expansion of cortical progenitors. **Neuron**, 2023.

Most recently, I collaborated with Prof. Alban de Kerchove d'Exaerde, with whom I share my teaching duties, on groundbreaking research into drug addiction and how this is influenced by epigenetic modifications. While some gene changes have been studied in areas of the brain linked to reward, like the ventral tegmental area and nucleus accumbens, the role of a specific gene change called histone H2A monoubiquitination in the paraventricular thalamus was unknown. Our research found that this epigenetic modification, controlled by proteins Maged1 and USP7, increases with chronic cocaine use and affects behaviors related to cocaine addiction. Blocking these proteins in specific brain cells prevented this histone monoubiquitination and reduced cocaine-related behaviors. Additionally, variations in the genes *MAGED1* and *USP7* are linked to different levels of addiction risk in humans. These findings highlight a new way that gene regulation affects addiction and could help identify people at higher risk for drug addiction.

Publication related to this research:

USP7/Maged1-Mediated H2A Monoubiquitination in the Paraventricular Thalamus: An Epigenetic Mechanism Involved in Cocaine Use Disorder. **Nat Commun.**, 2023.

TEACHING INTERESTS OVER THE LAST 5 YEARS

Over the past five years, I have been entrusted with teaching duties in the Master's in Biomedical Sciences program at ULB, where I present the most prevalent neurodegenerative and neurodevelopmental diseases. My approach emphasizes the specific cellular and molecular mechanisms underlying these diseases, linking the vulnerability of specific neuron populations and brain areas to their clinical manifestations. My teaching vision, grounded in the triple concordance approach and the latest pedagogical methods and technologies, integrates recent research articles and reference reviews to blend traditional lectures with inverted classes. This method encourages student interaction and fosters a proactive research mindset.

Additionally, I developed an online module in the frame of the Executive Master in Neuropsychiatry & Psychogeriatrics, jointly offered by ULB and UMONS. This module updates clinicians and health professionals on cutting-edge cellular, molecular, and genetic knowledge regarding diseases affecting the elderly. It also includes latest in vivo and in vitro models to enhance understanding of these diseases and support the development of future therapeutic approaches.

These initiatives reflect my commitment to advancing education and research in Neurobiology, with a focus on practical applications and innovative teaching strategies which I also intend to develop at UMONS.