

Lucie P. PELLISSIER

Personal

13 rue des Lys
37100 Tours

+33 6 61 43 99 93

lulakanal@hotmail.fr

Born: 05/10/1982 (32); married, 1 son (5) and 1 daughter (1).

Nationality: French

Professional

équipe DRUGS, PRC
UMR7247 CNRS INRA Université de Tours
37380 Nouzilly, France

+33 2 47 42 75 60

lpellissier@tours.inra.fr

PhD in Neuroscience

ACADEMIC ACHIEVEMENT

- 2015-... **Postdoctoral fellow** in DRUGS team at the unit Physiologie de la Reproduction et des Comportements, UMR7247 INRA-CNRS-Université de Tours. Team leaders: Julie Le Merrer et Jérôme Becker. Collaborations: Jean-Philippe Pin, Cyril Goudet et Sylvie Claeysen (IGF, Montpellier). *"Development of therapeutic single-chain antibodies targeting GPCRs to modulate social interactions."*
- 2014-2015 **Postdoctoral fellow** in Clinical Genetics team. Team leader: Prof. Arthur Bergen at the Academic Medical Center (AMC) and Free University (VU), Amsterdam. Collaborations: Vivi Heine (VU), Hein ten Riele (NKI). *"Development of rodent eye clinic for retinal degeneration: Proof-of-principle with AMD disorders."*
- 2009-2014 **Postdoctoral fellow** in Neuromedical Genetics team. Team leader: Jan Wijnholds at the Netherlands Institute for Neuroscience (NIN), Amsterdam. Collaborations: Mathias W. Seeliger (Tübingen, Germany) and John G. Flannery (Berkeley, California).

"Development of gene therapy vectors and mouse models for CRB1-related retinal diseases."
- 2005-2009 **PhD in Neurobiology** (MNRT and monitorat Grants from French Research ministry) at Université Montpellier I and Institut de Génomique Fonctionnelle (IGF), Montpellier, France. PhD supervisors: Sylvie Claeysen and Aline Dumuis. Collaborations: Leonardo Pardo (Barcelona, Spain), Jean-Louis Banères (Montpellier, France), Mari-Luz Lopez-Rodriguez (Madrid, Spain) and Brian Conklin (San Francisco, California). *"The RASSL-5-HT₄: A new tool of interest in molecular pharmacology and for therapy."*
- 2003-2005 **Master in Neurobiology**. University of Montpellier II, France.
- 2000-2003 **Bachelor in Biology and Chemistry**. University of Paris XI, Orsay, France.

FELLOWSHIPS and AWARDS

- 2015 Postdoctoral Fellowship **Marie Curie/Agreenskills** (22k€ 24 months).
- 2014 **Grant Fellowship** from the Dutch Uitzicht blindness funds (14k €).
- 2013 **Grant Fellowship** from the Dutch Uitzicht blindness funds (2k €).
- 2008 **Travel Fellowship** from the French Society for Neurosciences for 6th FENS meeting in Geneva, Switzerland.

- 2008 **Erasmus Fellowship** for a PhD traineeship in Dr Leonardo Pardo's laboratory, Barcelona, Spain.
- 2005-2008 **Assistant Professorship** from Ecole Nationale Supérieure de Chimie de Montpellier (ENSCM).
- 2005-2008 "MNRT" **PhD Fellowship** from the French Ministry of Education and Research.

TRAINING/TEACHING

- 2013 **Qualified** in cellular biology, molecular biology and Neuroscience (sections 64, 65 & 69) for assistant-professorship in France
- 2005-2008 **Assistant-professor (monitorat)** at the Ecole Nationale Supérieure de Chimie of Montpellier (ENSCM), Montpellier, France.

Training of students:

- 2010-2014 Penny Hartsuiker, Feline Spiering, Oswald Kraikamp Momna Aslam and Rousjan Amir (technician students); Marco Heuvelman and Christian Kerker (Bachelor students); Thilo Buck (Master student).
- 2007 Emilie Queffeulou (Master)
- 2006 Marion Pillot (engineer) and Aurélien Daurat (4th year of medicine)

TECHNICAL SKILLS

- **Molecular biology:** PCR (classical, site-directed mutagenesis, tag of proteins); Subcloning in expression and AAV plasmids; Amplification, purification and validation of plasmids from bacterial strains (DH5, Sure2, JM109, BL21).
- **Cellular biology:** Cell lines (DK, COS7, HEK293T), primary neuron cultures (striatum, dopaminergic neurons); Model of dopaminergic neuron degeneration (spontaneous, MPP+, 6-OHDA); Primary culture of P1 mouse retina and human donor retinas; Transfection (lipofectamine, electroporation, CaPO₄).
- **Biochemistry and Pharmacology:** Immunoprecipitation experiments, Western Blotting, protein quantification; Fluorescence Resonance Energy Transfer (FRET) experiments; Cell surface expression (ELISA, FACS); Binding experiments of 5-HT₄R ligands (³H); Quantification of intracellular second messenger (cAMP, IP₃) by homogenous time resolved fluorescence (htrf) technology; Bioluminescence resonance energy transfer (BRET) experiments.
- **Viruses and In vivo:** Production, purification and characterization of recombinant canine adenovirus (CAV) and adeno-associated virus (AAV); Infection of cell lines (CAV, AAV), primary culture of neurons (CAV) and human retina cultures (AAV); *In vivo* injections in the substantia nigra in mouse brain, intravitreally and subretinally in mouse eye, systemic injection via the retro-orbital sinus, tail vein, peritoneal and subcutaneous routes; Histology and Immunohistochemistry from embryos to adult mice; Scanning Laser Ophthalmoscope (SLO) and electroretinogram recording (ERG).

SCIENTIFIC COMMUNICATIONS

Publications

- Meirsmann ACC, Le Merrer J, **Pellissier LP**, Diaz J, Clesse D, Kieffer BL, Becker JAJ. Mice lacking GPR88 show motor deficit, improved spatial learning and low anxiety reversed by delta opioid antagonist. *Biol Psy. In revision*.
- **Pellissier LP**, Quinn PM, Alves CH, Vos RM, Klooster J, Flannery JG, Heimer JA, Wijnholds J. Gene Therapy into Photoreceptors and Müller Cells Restores Retinal Structure and Function in CRB1 Retinitis Pigmentosa Mouse Models. *Hum Mol Genet*. 2015 Jul 15;23(14):3759-71. Facteur d'impact : 6.677.
- **Pellissier LP**, Lundvig DMS, Tanimoto N, Klooster J, Vos RM, Richard F, Sothilingam V, Garcia Garrido M, Le Bivic A, Seeliger MW, Wijnholds J. CRB2 acts as a modifying factor of CRB1-related retinal dystrophies in mice. *Hum Mol Genet*. 2014 Jul 15;23(14):3759-71.
- **Pellissier LP**, Hoek RM, Vos RM, Aartsen WM, Klimczak RR, Hoyng SA, Flannery JG, Wijnholds J. Specific Tools for Targeting and Expression in Müller Glial Cells. *Molecular Therapy - Methods and clinical development*. 2014 Mar, 19; 1:14009. doi:10.1038/mtm.2014.9
- Alves CH, **Pellissier LP**, Vos RM, Garrido MG, Sothilingam V, Seide C, Beck SC, Klooster J, Furukawa T, Flannery JG, Verhaagen J, Seeliger MW, Wijnholds J. Targeted ablation of Crb2 in Photoreceptor Cells induces Retinitis Pigmentosa. *Hum Mol Genet*. 2014 Jul 1;23(13):3384-401.
- Alves CH, **Pellissier LP**, Wijnholds J. The CRB1 and adherens junction complex proteins in retinal development and maintenance. *Prog Retin Eye Res*. 2014 May;40:35-52.
- **Pellissier LP**, Alves CH, Quinn PM, Vos RM, Tanimoto N, Lundvig DM, Dudok JJ, Hooibrink B, Richard F, Beck SC, Huber G, Sothilingam V, Garcia Garrido M, Le Bivic A, Seeliger MW, Wijnholds J. Targeted ablation of crb1 and crb2 in retinal progenitor cells mimics leber congenital amaurosis. *PLoS Genet*. 2013 Dec;9(12):e1003976.
- Claeysen S, Donneger R, Giannoni P, Gaven F, **Pellissier LP**. Serotonin type 4 receptor dimers. *Methods Cell Biol*. 2013;117:123-39.
- Gaven F¹, **Pellissier LP**¹, Queffeuilou E, Cochet M, Bockaert J, Dumuis A, Claeysen S. Pharmacological profile of engineered 5-HT₄ receptors and identification of 5-HT₄ receptor-biased ligands. *Brain Res*. 2013 May 20;1511:65-72. (¹co-1st author)
- Alves CH, Sanz AS, Park B, **Pellissier LP**, Tanimoto N, Beck SC, Huber G, Murtaza M, Richard F, Sridevi Gurubaran I, Garcia Garrido M, Levelt CN, Rashbass P, Le Bivic A, Seeliger MW, Wijnholds J. Loss of CRB2 in the mouse retina mimics human retinitis pigmentosa due to mutations in the CRB1 gene. *Hum Mol Genet*. 2013 Jan 1;22(1):35-50.
- **Pellissier LP**, Barthelet G, Gaven F, Cassier E, Trinquet E, Pin JP, Marin P, Dumuis A, Bockaert J, Banères JL, Claeysen S. G protein activation by serotonin type 4 receptor dimers: evidence that turning on two protomers is more efficient. *J Biol Chem*. 2011 Mar 25;286(12):9985-97.
- Aartsen WM, van Cleef KW, **Pellissier LP**, Hoek RM, Vos RM, Blits B, Ehlert EM, Balaggan KS, Ali RR, Verhaagen J, Wijnholds J. GFAP-driven GFP expression in activated mouse Müller glial cells aligning retinal blood vessels following intravitreal injection of AAV2/6 vectors. *PLoS One*. 2010 Aug 24;5(8):e12387.
- de la Fuente T, Martín-Fontecha M, Sallander J, Benhamú B, Campillo M, Medina RA, **Pellissier LP**, Claeysen S, Dumuis A, Pardo L, López-Rodríguez ML. Benzimidazole derivatives as new serotonin 5-HT₆ receptor antagonists. Molecular mechanisms of receptor inactivation. *J Med Chem*. 2010 Feb 11;53(3):1357-69.
- Barthelet G, Carrat G, Cassier E, Barker B, Gaven F, Pillot M, Framery B, **Pellissier LP**, Augier J, Kang DS, Claeysen S, Reiter E, Banères JL, Benovic JL, Marin P, Bockaert J, Dumuis A. Beta-arrestin1 phosphorylation by GRK5 regulates G protein-independent 5-HT₄ receptor signalling. *EMBO J*. 2009 Sep 16;28(18):2706-18.

- **Pellissier LP**, Sallander J, Campillo M, Gaven F, Queffeuou E, Pillot M, Dumuis A, Claeysen S, Bockaert J, Pardo L. Conformational toggle switches implicated in basal constitutive and agonist-induced activated states of 5-hydroxytryptamine-4 receptors. *Mol Pharmacol*. 2009 Apr;75(4):982-90.
- Chang WC, Ng JK, Nguyen T, **Pellissier L**, Claeysen S, Hsiao EC, Conklin BR. Modifying Ligand-induced and Constitutive Signaling of the Human 5-HT₄ Receptor. *PLoS One*. 2007 Dec 19;2(12):e1317.
- Barthelet G, Framery B, Gaven F, **Pellissier L**, Reiter E, Claeysen S, Bockaert J and Dumuis A. 5-HT₄ receptor Activation of the ERK Pathway Depends on Src Activation but Not on G Protein or β-Arrestin signalling. *Mol Biol Cell*. 2007 Jun;18(6):1979-91.

Patent

Co-inventor on the patent entitled "Recombinant AAV-Crumbs homologue composition and methods for treating LCA-8 and progressive RP", submitted August 2013 to the European Patent Office.

Posters

- **Pellissier L**, Lundvig D, Alves CH, Sanz Sanz A, Garcia Garrido M, Dütsch G, Beck S, Huber G, Tanimoto N, Seeliger M, Wijnholds J. *CRB1 and CRB2 in Retinal Development*. ARVO; Fort Lauderdale, Florida, 2011.
- **Pellissier L**, Sallander J, Campillo M, Queffeuou E, Pillot M, Dumuis A, Claeysen S, Bockaert J and Pardo L. *Mechanism of agonist-induced activation of G protein- coupled receptors : a concerted T_{3.36}/W_{6.48} rotamer toggle switch in the 5-HT₄ receptor*. FENS; Geneva, Switzerland, 2008.
- **Pellissier L**, Gaven F, Trinquet E, Pin JP, Bockaert J, Dumuis A and Claeysen S. *Functioning of a class A GPCR dimer : use of a mutant 5-HT₄ receptor stimulated solely by synthetic ligands*. XXXIInd european conference on hormones and cell regulation; Mont St Odile, France, 2007.
- **Pellissier L**, Gaven F, Bockaert J, Dumuis A and Claeysen S. *Functioning of a class A GPCR dimer: use of a mutant 5-HT₄ receptor stimulated solely by synthetic ligands*. 8th Congres of French Neurosciences; Montpellier, France, 2007.

Oral communications

- *CRB proteins expression and localization in the human retina*. ARVO annual meeting 2014, Orlando, Florida.
- *Gene therapy for CRB1-related eye diseases and Crb1 and Crb2 in retinal development*. Crumbs consortium meeting 2012, Marseille, France.
- *Gene therapy for CRB1-related eye diseases and Crb1 and Crb2 in retinal development*. Crumbs consortium meeting 2011, Amsterdam, The Netherlands.
- *AAV6 derived capsids for transduction of Müller glia cells, implication for human CRB1 gene therapy and Crb1-Crb2 double knockout mice*. Crumbs consortium meeting 2010, Dresden, Germany.
- *Functioning of a class A GPCR dimer: use of a mutant 5-HT₄ receptor stimulated solely by synthetic ligands*. GPCR meeting 2008, La Grande Motte, France.