



## Emerging research project fellow from the Norman regional council

### Education

PhD	University of Caen (France) obtained with honors	2018-2022
MSc	University of Nantes & University of Caen (France)	2016-2018
BSc	University of Caen (France)	2013-2016

### Research experiences

**Post-doc/Regional fellow**    INSERM U1237 PhIND/BB@C - Pr. Denis Vivien    2022-Now

Lead of two main research projects:

What could be the long term impact of general anesthesia in cerebral and retinal (CNS) development?

What about the involvement of tPA and NMDAR in CNS development?

- o Study of the anatomical/structural integrity of the CNS by MRI & spinning disk confocal imaging.
- o Use of functional approaches: study of visual abilities to assess visual function; study of the integrity of the visual tract by fast ultrasound imaging (fUS).
- o Use of molecular, cellular & tissue approaches: study of animal inflammatory status by flow cytometry; fluorescence *in situ* hybridization (FISH), imaging of wholemound retinas, brain & eye sections.

**PhD**    INSERM U1237 PhIND/BB@C - Pr. Olivier Toutirais & Pr. Brigitte Le Mauff    2018-2022

Lead of one main & one side research projects:

What is the role of tPA in the immune response? -main

- o Study of the importance of tPA for the generation, distribution & maturation of different cell populations of the immune system through the use of flow cytometry. Realization of a murine model of acute inflammation.

Characterization of T cell response against NMDAR in anti-NMDAR autoimmune encephalitis -side

- o Study of human & murine immunity through *in silico*, *in vitro* & *in vivo* experiments (cell culture, ELISpot, Western Blot, flow cytometry, behavioral tests).

**MSc**    INSERM U1237 PhIND/BB@C - Dr. Fabian Docagne & Pr. Richard Macrez    2017-2018  
          INSERM U1232 CRCI2NA            - Dr. Adrien Bosseboeuf            2016-2017

Development of a standardized, fast & quantitative technique to detect anti-NMDAR autoantibodies

Study of the anti-infectious specificity of monoclonal Ig from MGUS and Multiple Myeloma patients



## Publications

6. Levard D, [Seillier C](#), Bellemain Sagnard M, Fournier AP, Lemarchand E, Dembech C, Riou G, McDade K, Smith C, McQuaid C, Montagne A, Amann L, Prinz M, Vivien D, Rubio M. Central nervous system-associated macrophages modulate the immune response following stroke in aged mice. **Nat Neurosci.** 2024 Jul 3. doi: 10.1038/s41593-024-01695-3. IF = 28.8.
5. [Seillier C](#), Leseq L, Hélie P, Marie C, Vivien D, Docagne F, Le Mauff B, Toutirais O. Tissue-plasminogen activator effects on the phenotype of splenic myeloid cells in acute inflammation. **J Inflamm (Lond).** 2024 Feb 14;21(1):4. doi: 10.1186/s12950-024-00375-0. IF = 5.1.
4. [Seillier C\\*](#), Lesept F\*, Toutirais O, Potzeka F, Blanc M, Vivien D. Targeting NMDA Receptors at the Neurovascular Unit: Past and Future Treatments for Central Nervous System Diseases. **Int J Mol Sci.** 2022 Sep 7;23(18):10336. doi: 10.3390/ijms231810336. IF = 6.2.
3. [Seillier C](#), Hélie P, Petit G, Vivien D, Clemente D, Le Mauff B, Docagne F, Toutirais O. Roles of the tissue-type plasminogen activator in immune response. **Cell Immunol.** 2022 Jan;371:104451. doi: 10.1016/j.cellimm.2021.104451. IF = 4.2.
2. Hélie P, Camacho-Toledano C, Leseq L, [Seillier C](#), Miralles AJ, Ortega MC, Guérit S, Lebas H, Bardou I, Vila-Del Sol V, Vivien D, Le Mauff B, Clemente D, Docagne F, Toutirais O. Tissue plasminogen activator worsens experimental autoimmune encephalomyelitis by complementary actions on lymphoid and myeloid cell responses. **J Neuroinflammation.** 2021 Feb 20;18(1):52. doi: 10.1186/s12974-021-02102-5. IF = 9.6.
1. Bosseboeuf A, [Seillier C](#), Mennesson N, Allain-Maillet S, Fourny M, Tallet A, Piver E, Lehours P, Mégraud F, Berthelot L, Harb J, Bigot-Corbel E, Hermouet S. Analysis of the Targets and Glycosylation of Monoclonal IgAs From MGUS and Myeloma Patients. **Front Immunol.** 2020 May 27;11:854. doi: 10.3389/fimmu.2020.00854. IF = 8.8.

## Skills

### Molecular biology

Protein purification (HPLC/chromatography), protein microarray (MIAA), Western Blot, genotyping,

### Cellular biology

Human PBMC isolation and primary culture, primary murine splenic cell culture, *in vitro* models of immunization, cell line culture (HEK293, DC2.4), flow cytometry, ELISA, ELISpot.

### Histology

Immunohistochemistry (IHC), hematoxylin & eosin (H&E) staining, FISH, spinning disk confocal imaging.

### Animal experimentation

Experimental autoimmune encephalomyelitis (EAE), autoimmune encephalitis (EA) and acute inflammation murine models, several behavioral tests (memory, motor, anxiety, visual assessments), anatomical imaging (7T classic MRI, MICRON IV), molecular imaging (labeled MPIOs *via* MRI), fUS.

### *In silico* approaches

Bioinformatic immunogenicity predictions (IEDB, NetMHCIIpan, TEPITOPE algorithms).



## Communications

Consequences of general anesthesia, from primary visual cortex to retina /**Oral**.  
Norman day of biology research - Rouen, France. June 11<sup>th</sup> 2024.

Consequences of general anesthesia, from primary visual cortex to retina /**Poster**.  
Gordon Research Seminar & Gordon Research Conference - Lucca, Italy. May 18<sup>th</sup>-24<sup>th</sup> 2024.

Role of tPA in innate immune response /**Oral**.  
3<sup>rd</sup> ISFP & PA congress - Caen, France. September 5<sup>th</sup>-9<sup>th</sup> 2022.

Analysis of T cell response against NMDAR in human and mice /**Poster**.  
Encephalitis Conference - London, United Kingdom. December 8<sup>th</sup> 2020.

Analysis of T cell response against NMDAR and implication for immunotherapy development targeting neurological and psychiatric disorders /**Poster**.  
Norman day of biology research - Caen, France. November 19<sup>th</sup> 2019.

Study of the T cell response against NMDAR /**Oral**.  
22<sup>nd</sup> doctoral school days - Caen, France. March 21<sup>st</sup>-22<sup>nd</sup> 2019. **First prize awarded.**

## Grants

Emerging research project/post-doc fellow from the Norman regional council. <b>Oral defense</b> of the project in front of a regional committee - 140K€	2022-2024
Research project/PhD fellow from the Norman regional council. <b>Oral defense</b> of the project in front of a regional committee - 120K€	2018-2022

## Outreach activities

President of « Normandy Doc' » - Association of young researchers.	2019-2021
Final of « Ma thèse en 180s » - Scientific outreach, national contest.	2020
Participant to the « Norman festival of Excellence » and to « La fête de la science » - Scientific outreach.	2018-2019
Participant to a MS patients-researchers meeting - Scientific outreach, sharing progress within the field.	2018-2019

## Supervising and plus

Supervision of 5 MSc students & 1 bachelor.	2019-2024
Member of a pharmacy thesis jury.	2023
Diploma of surgery in animal experimentation.	2022
Diploma of designer projects in animal experimentation.	2021