PhD Student:

Analyzing Patient Serum Antibody Repertoires in Chronic Inflammatory Demyelinating Polyneuropathy

The **Synaptopathies and Autoantibodies (SYNATAC)** team based in Saint-Étienne, France, led by **Professor Jean-Philippe Camdessanché**, is looking to recruit a highly motivated **PhD student**. This is an exciting opportunity to join a collaborative effort between the **Institute NeuroMyoGène**, **CNRS-Inserm**, the **University of Saint-Etienne (Université Jean Monnet Saint-Étienne)**, and the **European Reference Center for Neuromuscular Diseases** at the **University Hospital of Saint-Étienne**.

Our research focuses on the identification of autoantibodies as biomarkers and potential pathogenic modulators in **immune-mediated peripheral neuropathies**. We investigate their role in the degeneration of peripheral neurons using both in vitro and in vivo models. Over the last five years, our team has consistently contributed to the field with high-impact publications, demonstrating our commitment to advancing scientific understanding and treatment options for these conditions.

In our latest project, we aim to unravel the differences in the autoantibody repertoires of patients with **Chronic Inflammatory Demyelinating Polyneuropathy (CIDP)**, particularly focusing on treatment responders versus non-responders. Additionally, we seek to validate potential biomarkers and investigate the pathogenic potential of these antibodies.

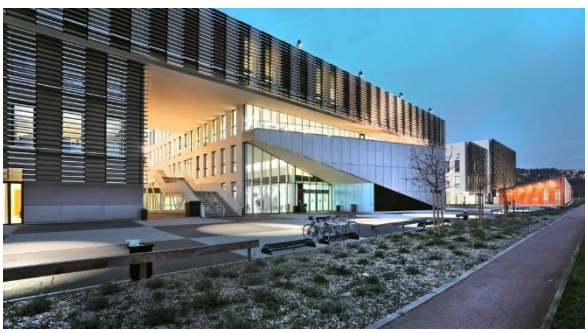
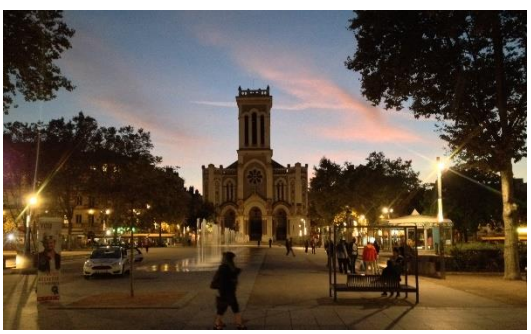
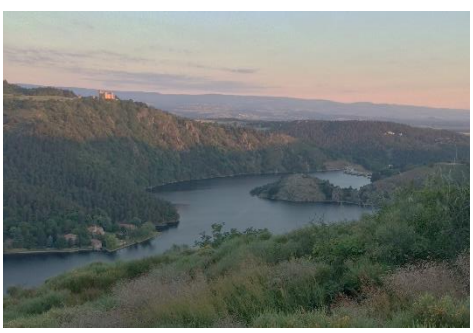
Environment

The **SYNATAC** team is a specialized subgroup within the **Institut NeuroMyoGène (MeLiS-INMG)**. SYNATAC includes two full professors in neurology (Jean-Philippe Camdessanché and Jean-Christophe Antoine), two assistant professors, two researchers, one clinical research associate, and two technicians. Together, we are dedicated to both basic and translational research in the neuromuscular field.

The **MeLiS-INMG** focuses on basic and translational research in neuromuscular disorders and hosts 18 research teams, with a total of 250 individuals. The institute is equipped with state-of-the-art facilities for molecular biology, imaging, cell biology, and physiology, providing a dynamic and high-quality scientific environment.

Mission

The candidate will work closely with our scientist **Christian Moritz** and collaborate with a partner from a pharmaceutical company. The primary goal is to analyze protein microarray data and examine the autoantigenomes of various **CIDP** study groups. In the next phase, selected autoantibodies of interest will be validated using **ELISA** and/or cell-based assays. In the third year, the candidate will establish and test models to evaluate the pathogenicity of the identified autoantibodies.

We are seeking candidates with a **Master's degree** (or near completion) in **biological or biomedical sciences**, or a related field. The ideal candidate should demonstrate the following:

- **Skills**: Candidates should optimally have experience in establishing and conducting classical protein analytical assays, primarily **ELISA** or **protein microarrays**. Additional experience with techniques such as **Western blotting** and **immunohistochemistry** is advantageous. Knowledge of **cell-based assays** or **immunoprecipitation** is also beneficial.

- **Bioinformatics**: Experience with bioinformatics techniques (such as clustering analyses, over-representation analyses) will be considered a strong asset.

- **Independence and Innovation**: An independent working style and the ability to contribute new ideas to improve methods and advance the project are essential.

- **Scientific Background**: A solid background in **protein biochemistry**, **proteomics**, **protein analytics**, and/or **bioinformatics** is preferred.

- **Collaboration**: Ability to work effectively in a team and collaborate with other researchers and external partners is essential.

- **Willingness to Learn**: Openness to learn new techniques and rapidly adapt to new scientific challenges is highly valued.

- **Problem-Solving**: Strong analytical and problem-solving skills to overcome experimental challenges.

Terms and Conditions

The PhD student will conduct their research in close collaboration with the Principal Investigators, with the aim of producing high-quality publications and contributing to the team's research objectives. The position will be available starting **as soon as possible**. The position is fully funded for **three years**, with potential extensions based on project progress and funding availability.

- **Salary**: The salary ranges from **1,400 to 1,800 € net per month**, depending on experience and in accordance with the university's salary scale.
- **Benefits**: The PhD student will receive full **social security**, **pension**, and **insurance** coverage as provided by the employer.

Cf. our web page:

https://www.univ-st-etienne.fr/fr/institut-neuromyogene.html →

How to apply?

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To apply, please submit the following documents to the Principal Investigator **Dr. Jean-Philippe Camdessanché (j.philippe.camdessanche@chu-st-etienne.fr)**

1. A cover letter highlighting your research interests, goals, competences, and previous scientific contributions.
2. A CV listing your education, publications, meeting presentations, and any other relevant skills.
3. Contact information for at least two references.

Publications of the last 5 years in the field of the application

Moritz, C. P., Tholance, Y., Vallayer, P. B., Do, L. D., Muñiz-Castrillo, S., Rogemond, V., Ferraud, K., La Marca, C., Honnorat, J., Killian, M., Paul, S., Camdessanché, J. P., & Antoine, J. G. (2023). Anti-AGO1 Antibodies Identify a Subset of Autoimmune Sensory Neuronopathy. Neurology(R) neuroimmunology & neuroinflammation, 10(3), e200105.

Moritz, C. P., Do, L. D., Tholance, Y., Vallayer, P. B., Rogemond, V., Joubert, B., Ferraud, K., La Marca, C., Camdessanché, J. P., Honnorat, J., & Antoine, J. C. (2022). Conformation-stabilizing ELISA and cell-based assays reveal patient subgroups targeting three different epitopes of AGO1 antibodies. Frontiers in immunology, 13, 972161.

Tholance Y, Antoine JC, Mohr L, Jung M, Reynaud-Federspiel E, Ferraud K, Camdessanché JP, Moritz CP. Anti-FGFR3 antibody epitopes are functional sites and correlate with the neuropathy pattern. J Neuroimmunol. 2021 Dec 15;361:577757.

Moritz CP, Tholance Y, Stoevesandt O, Ferraud K, Camdessanché JP, Antoine JC. CIDP Antibodies Target Junction Proteins and Identify Patient Subgroups: An Autoantigenomic Approach. Neurol Neuroimmunol Neuroinflamm. 2021 Jan 6;8(2):e944.

Moritz CP, Stoevesandt O, Tholance Y, Camdessanché JP, Antoine JC. Proper definition of the set of autoantibody-targeted antigens relies on appropriate reference group selection. N Biotechnol. 2021 Jan 25;60:168-172.

Moritz CP, Paul S, Stoevesandt O, Tholance Y, Camdessanché JP, Antoine JC. Autoantigenomics: Holistic characterization of autoantigen repertoires for a better understanding of autoimmune diseases. Autoimmun Rev. 2020 Feb;19(2):102450.

Tholance Y, Moritz CP, Rosier C, Ferraud K, Lassablière F, Reynaud-Federspiel E, França MC Jr, Martinez ARM, Camdessanché JP, Antoine JC; anti-FGFR3 antibody Study Group. Clinical characterisation of sensory neuropathy with anti-FGFR3 autoantibodies. J Neurol Neurosurg Psychiatry. 2020 Jan;91(1):49-57.

Moritz CP, Tholance Y, Rosier C, Reynaud-Federspiel E, Svahn J, Camdessanché JP, Antoine JC. Completing the Immunological Fingerprint by Refractory Proteins: Autoantibody Screening via an Improved Immunoblotting Technique. Proteomics Clin Appl. 2019 Jul;13(4):e1800157.

Moritz CP, Tholance Y, Lassablière F, Camdessanché JP, Antoine JC. Reducing the risk of misdiagnosis of indirect ELISA by normalizing serum-specific background noise: The example of detecting anti-FGFR3 autoantibodies. J Immunol Methods. 2019 Mar;466:52-56.