MuSkLE
PhD programme
Building, maintaining and repairing the functional locomotor system

Co-funded by the European Union

PhD Position 21 job vacancy

Reference:	**PP21**
Title:	**Study of the role of ubiquitinating enzymes in the context of muscle atrophy**
Hiring institution:	**Université Clermont Auvergne (UCA)**
Location:	Clermont-Ferrand, France
Start date:	As from 1st September 2027
Duration:	36 months
Application deadline:	15th January 2027

Job description

Objective:	Ageing and chronic diseases are catabolic states associated with muscle loss. These conditions of long-term muscle atrophy result in reduced muscle strength and function contributing to frailty, and increased morbidity and mortality. Preventing muscle protein loss during catabolic states is thus a major public health issue. However, there is currently no treatment to limit muscle wasting. Two proteolytic systems, the ubiquitin-proteasome system (UPS) and selective autophagy, play a major role in muscle atrophy by degrading signaling and contractile proteins (the main proteins in muscle cells) and removing damaged organelles. To be targeted for degradation by the proteasome or by selective autophagy, proteins (or organelles) are first ubiquitinated via the sequential action of three ubiquitinating enzymes. The E1 enzyme activates ubiquitin (Ub) and transfers it to an E2 conjugating enzyme (one of 35). In the presence of an E3 ubiquitin ligase, the E2 covalently binds the Ub to the substrate. E3 ligases specifically recognize substrates that will be ubiquitinated and degraded. In humans, more than 600 E3 ligases have been predicted *in silico*, most of which have no known function. The recruited doctoral fellow **(DF21)** will study the involvement of different E3 ligases in the context of muscle atrophy. The subject will mainly involve cell biology and histology approaches, as well as animal sampling. Part of the project will also involve technical development.
Collaborations and co-supervisions:	The project will be cosupervised by Cécile Polge and Lydie Combaret.
Supervisors:	Main supervisor: Cécile POLGE – cecile.polge@inrae.fr Supervisor 2: Lydie COMBARET
Place of work:	Centre de Recherche INRAE, Route de Theix, 63122 Saint Genès Champanelle
Required degree	Master's degree or equivalent in Biology

Skills/Experience:	Hard Skills: - Cell culture (asepsis, line maintenance, functional assays). Soft Skills: - Meticulous, Rigorous - Patience, resilience and troubleshooting - Scientific curiosity - Time management
Keywords	Muscle atrophy; proteolysis; ubiquitin ligase; rodent cultured myotube; subcellular localization;

Mandatory requirements

Eligibility:	The doctoral fellow: - should not have resided or carried out his/her main activity (work, study) in the country where he/she is being recruited, i.e., France, **for more than 12 months in the 3 years before the application call deadline,** unless this time was part of a compulsory national service or a procedure for obtaining refugee status under the Geneva Convention. - **must be in possession of a master's degree** at the date of the call deadline. Applicants who have completed their cursus but not yet been awarded the formal master's degree by that date will not be considered eligible. - must be **a doctoral candidate** (not already in possession of a doctoral degree at the date of the application call deadline).
Languages:	Oral and written skills must meet the standards of academic English used in international research.

Job details

Type of contract:	Full time position
Gross salary:	The monthly **living allowance, including employer and employees' social charges, is €3,500.** This amount corresponds to a gross monthly salary estimated to **€2,393**, and to an estimated net monthly salary before income tax of **€1,922**. On top of the monthly salary, the doctoral fellow will receive a **mobility allowance,** including employer and employees' social charges of €132 per month during 36 months which constitutes gross monthly allowance €94,3 and net monthly allowance of €75,75.
Other benefits:	**Social Protection**: The doctoral fellow will benefit from **full social security coverage**, including health insurance, unemployment insurance, and pension contributions. He/she will also have access to occupational health services (*médecine du travail*), as required by French labour law. **Additional Insurance**: Pursuant to Decree 2022-633 of 22 April 2022, as amended, staff of the Ministry of National Education, Higher Education and Research are required to join the collective health insurance scheme taken out by their employer, i.e. MGEN. The doctoral fellow must enrol as soon as he/she joins the UCA. However, in certain cases, you may be able to apply for an exemption. Further information is available here : https://www.mgen.fr/psc-agents-en-esr-js/parcours-d-affiliation/ **Paid Leave**: The doctoral fellow is entitled to up to **44 days of paid leave annually**, in accordance with national labour law, and will enjoy the same employment rights as other public sector employees, including student union membership. **Transport**: The doctoral fellow benefits from significantly **reduced fares on public transport**, available in all partner cities. Additionally, the host institution will cover 75% of the monthly transportation costs.