



## Two Masters projects in the lab of RNA viruses and host factors (Karim MAJZOUB)

The research group “RNA viruses and host factors” at the Institut de Génétique Moléculaire de Montpellier (IGMM) is actively looking for two Masters students for long internships (4-6 months) in biochemistry and/or virology to study RNA viruses (Deltaviruses) and their replication across animal species. The internships would take place during the 2022/2023 university year.

### Research Topic

Using deltaviruses as simple RNA virus models, our group aims to identify and characterize host factors essential for replication of RNA viruses in both human and animal hosts. We are using and building new molecular tools (e.g. Replicons, Microscopy, Genetic, Proteomic and biochemical pipelines) to study and understand deltavirus infection in both human and animal hosts. (<https://www.igmm.cnrs.fr/en/team/rna-viruses-and-host-factors>).

### Project 1

You will be supervised by Karim MAJZOUB and other senior members of the team on a dedicated project. Your project would involve using CRISPR genetic screens to identify host factors contributing to hepatitis D virus and other *HDV-like* viruses replication (e.g. Rodent Deltavirus, Snake Deltavirus). The techniques that the student will be trained on and will use in the project would involve molecular cloning, virus production, infection assays, microscopy (Immunofluorescence, smFISH), Western Blot and RT-qPCR.

### Project 2

You will be supervised by Karim MAJZOUB and will work with our scientific collaborators from Institut de Génétique Moléculaire de Montpellier (IGF) of Montpellier. Your project would involve producing and purifying HDV Antigen proteins and other animal Deltaviruses Antigen with viral RNA (as a Ribonucleoprotein complex or RNP) or without viral RNA. The purified RNPs will be then used to initiate viral replication in cells, to generate nanobodies, as well as for structural biology work.

### Selection Criteria

- Experience with classical molecular biology techniques (cloning, PCR, RT-qPCR, Western Blot)
- An experience in protein production and purification is not mandatory but highly desired
- Good written and oral English communication skills
- Ability to work as part of a team as well as independently
- Scientifically curious, innovative and well organized
- Ability to deliver recurring results/reports to required standard and schedule

### Position Summary

The student will be gratified 591,50 € /month for the period of his internship and will have the possibility to pursue a PhD thesis in the lab after his internship, depending on his dedication and performance .

### Research Environment

The Institut de Génétique Moléculaire de Montpellier (IGMM) is a mixt research unit of CNRS and Montpellier University. IGMM is composed of 16 research groups (~180 persons), 9 technological research platforms and 9 common services. IGMM is a multidisciplinary institute whose work in fundamental and applied molecular and cellular biology fields has international impact ([www.igmm.cnrs.fr](http://www.igmm.cnrs.fr)). IGMM offers an international, stimulating and collaborative research environment, in which career development is fostered.



## Application

Please send application to  
[karim.majzoub@igmm.cnrs.fr](mailto:karim.majzoub@igmm.cnrs.fr)  
or  
[majzoub@gmail.com](mailto:majzoub@gmail.com)

with the following documents:

1. Cover letter highlighting your qualification and motivation
2. CV including references if possible

The team is composed of :

Karim Majzoub (P.I)  
Valerie Courgnaud (Senior Scientist)  
Pierre Khalfi (Post-doc)  
Zoé Denis (PhD student)

