



LipAgg
DOCTORAL NETWORK
ON AMYLOID PROTEIN

MAX PLANCK INSTITUTE
FOR MULTIDISCIPLINARY SCIENCES



At the Max Planck Institute for Multidisciplinary Sciences, we bridge the gap between basic research and translational, preclinical approaches. Here, researchers from the fields of biology, chemistry, physics, and medicine collaborate across disciplines, supported by high-performance service facilities and a modern research infrastructure. As the largest institute of the Max Planck Society, with around 1,000 employees from more than 66 nations, we offer an inspiring, international working environment with exceptional scientific breadth.

The Department of *NMR-based Structural Biology* (Prof. Dr. Christian Griesinger) is inviting applications as follows:

Organisation/University

Max Planck Society/University of Göttingen

Research Field

Biochemistry – Biophysics

Researcher Profile

First stage researcher (R1)

Application Deadline

17/05/2026 23:00 Europe/Brussels

Location

Göttingen - Germany (28 months)

Bordeaux - France (7 months)

Ettlingen – Germany (1 months)

Type of contract

Temporary

Job Status

Full-time

Hours per week

39

Offer Starting Date

01/09/2026

EU Research Framework Programme

HORIZON-MCSA-2024-DN

Marie Curie Grant Agreement Number

101227450

LipAgg Doctoral Network project

The LipAgg project (<https://lipagg.eu/>) seeks to unravel the structural complexities of amyloid protein-lipid aggregates and investigate their role in pathological aggregation, cellular toxicity, and intercellular spread. Focusing on key human amyloid proteins —amylin (IAPP), amyloid beta (A β), and α -synuclein (α S)—linked to type 2 diabetes (T2D), Alzheimer's disease (AD), and Parkinson's disease (PD), respectively, the project builds on recent discoveries made by the consortium. These findings highlight the critical role of free lipids in membrane damage through the formation of stable lipid-amyloidogenic protein complexes, leading to the lipid-chaperone hypothesis.



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LipAgg Doctoral Network program

The selected PhD candidate will participate in the EU-funded HORIZON-MSCA-DN-2024-01 project LipAgg. The LipAgg network brings together partners from 6 European countries and comprises 11 academic or research institutions and 12 industrial partners. The consortium is committed to delivering an outstanding training programme for 15 Doctoral Candidates (DCs) aimed at elucidating the role of lipids in the toxicity and propagation of protein aggregation.

Supervisors

Prof. Dr. Christian Griesinger – cigr@mpinat.mpg.de

Prof. Dr. Lucie Khemtémourian - lucie.khemtemourian@u-bordeaux.fr

Involved Company

Bruker - <https://www.bruker.com>

Title

NMR structure of AP-L complex of hIAPP and its effect on fibrils and membranes

Objectives

This project aims at preparing IAPP-lipid complexes and characterising them by NMR and their structure determination at the near atomic resolution. Structural characterization of the IAPP fibrils grown in the presence of the AP-L will be done together with cryo-EM. IAPP fibril formation kinetics in the absence and presence of AP-L will be studied as well as the incorporation of the AP-L into membranes. The PhD student will also investigate membrane damages and/or perturbations associated with IAPP-lipid complex binding using fluorescence leaking assay and ^2H and ^{31}P -NMR.

The Position

The selected PhD candidate will participate in the EU-funded HORIZON-MSCA-DN-2024-01 project LipAgg. The LipAgg network brings together partners from five European countries and comprises nine academic institutions and twelve industrial partners. The consortium is committed to delivering an outstanding training programme for fifteen Doctoral Candidates (DCs) aimed at elucidating the role of lipids in the toxicity and propagation of protein aggregation.

The Doctoral candidate key tasks will be to manage and carry out the assigned research project, participate in the LipAgg training and network activities, take PhD courses, write scientific articles and the PhD thesis, participate in national and international congresses and scientific meetings, undertake a research stay at an external research laboratory within the LipAgg network, and disseminate the obtained scientific results.

In particular, the DC enrolled in this position, will determine the structure of such hIAPP-lipid complexes by NMR spectroscopy in combination with photo-bleaching for the determination of the stoichiometry of the complexes and molecular dynamics. Experiments on integrity of membranes in the presence of the AP-Ls and fibrils as well as aggregation modulators will be studied. The Doctoral Candidate will be enrolled at the university of Göttingen in the Gauss program and work at the facilities of the Max Planck institute for Multidisciplinary Sciences under the supervision of Prof. Dr. Christian Griesinger for the structure determination aspects of the work (28 months). The project includes a 7 months secondment at the University of Bordeaux where the functional investigations regarding membrane integrity will be performed under the supervision of Prof. Dr. Lucie Khemtémourian, as well as a 1-month secondment at Bruker, to work with and obtain information about the latest developments at Bruker (Ettlingen, Germany).



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The expected start date is 1st September 2026.

The Candidate

The ideal candidate for this position is a highly motivated and talented researcher holding a Master's degree (MSc or equivalent) in chemistry, physics, biochemistry or biophysics. A solid background or keen interest in structure elucidation by NMR and preparation of biologically relevant samples is expected. The ideal candidate should be enthusiastic about tackling new scientific challenges and demonstrate strong motivation, persistence, and a results-oriented mindset. The candidate should be able to work effectively both independently and as part of an interdisciplinary team.

Excellent oral and written communication skills in English are essential. Strong organisational and planning abilities are also required.

Eligibility rules

This position is subject to the mobility and eligibility rules of the Marie Skłodowska-Curie Actions. In particular, the candidate must not have resided or carried out their main activity (work, studies, etc.) in Germany for more than twelve months during the three years immediately prior to the recruitment date, unless as part of a procedure for obtaining refugee status under the Geneva Convention. At the date of recruitment, the candidate must be a Doctoral Candidate, *i.e.* in the first five years (full-time equivalent research experience) of their research career and must not have been awarded a doctoral degree.

Funding

The successful candidates will receive a gross salary of **4.768,12€ plus 660€ family allowance if eligible** per month in accordance with the MSCA regulations for Doctoral Researchers. The net salary depends on local tax regulations. The salary includes a living allowance (4.058,12€), a mobility allowance (710€), and a family allowance (660€ if applicable). The PhD funding is for 36 months.

Required documents

CV - including methodological skills

Motivation letter

Copy of Master's degree (or proof of expected completion)

Master thesis (if available)

All academic transcripts

Contact information for at least two references

Contact information

To get more details please write to cigr@mpinat.mpg.de and lucie.khemtemourian@u-bordeaux.fr

Recent representative publications of Prof. Dr. Christian Griesinger and Prof. Dr. Lucie Khemtemourian:

1. The Structure of Human IAPP Fibril Structure Reflects Membrane and pH Conditions, V. Singh Mithu, K. Giller, E. Nimerovsky, K. Overkamp, L.B. Andreas, S. Becker, **C. Griesinger** *JACS* 147, 28943-54 (2025) DOI : [10.1021/jacs.5c06971](https://doi.org/10.1021/jacs.5c06971)
2. The small molecule inhibitor anle145c thermodynamically traps human islet amyloid peptide in the form of non-cytotoxic oligomers, S. Manikam, S. Ryazanov, A. Leonov, J. Nicolai, P. Praest, A. Giese, R. Winter, **L. Khemtemourian**, **C. Griesinger**, A. J. Killian, *Sci Rep.* 9, Article Number: 19023 (2019) DOI : [10.1038/s41598-019-54919-z](https://doi.org/10.1038/s41598-019-54919-z)



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3. The amyloid oligomer modulator anle138b has disease modifying effects in a human IAPP transgenic mouse model of type 2 diabetes mellitus (hIAPP Ob/Ob mice), M.M.H. Albariqi, S.M.G. Baauw, S.J.P.J. Fens, S. Versteeg, S. Ryazanov, A. Leonov, H.L.D.M. Willemen, N. Stathonikos, R.M. Seychell, A. El Saghir, **L. Khemtemourian**, N. Vassallo, A. Giese, N. Eijkelkamp, **C. Griesinger**, J.W.M. Höppener.
<https://doi.org/10.1101/2024.08.27.609850>.
4. **Khemtemourian L**, Fatafta H, Davion B, Lecomte S, Castano S and Strodel B*. Structural dissection of the first events following membrane binding of the islet amyloid polypeptide. *Frontiers in Molecular Biosciences*, **2022**, 9, 849979. DOI: 10.3389/fmolb.2022.849979
5. **Khemtemourian L**, Antoniciello F, Sahoo BR, Decossas M, Lecomte S and Ramamoorthy A*. Investigation of the effects of two major secretory granules components, insulin and zinc, on human-IAPP amyloid aggregation and membrane damage. *Chemistry and Physics of Lipids*, **2021**, 237, 105083. DOI: 10.1016/j.chemphyslip.2021.105083

We are committed to being a cosmopolitan institute that offers a diverse and inclusive working environment with equal opportunities. We also aim to increase the number of employees with disabilities. We welcome applications from all backgrounds.

Application

Please submit your application until **17th May 2026** preferably via e-mail and as a single PDF file to:

ausschreibung17-26@mpinat.mpg.de

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Information pursuant to Article 13 DS-GVO on the collection and processing of personal data during the application process can be found on our website below the respective job advertisement.