

ERC postdoc positions in vascular, computational, and cardiac biology - Mendjan lab, IMBA, Vienna BioCenter

The **Mendjan lab** aims to understand human heart development and disease through pioneering cardiac organoid technology (Hofbauer, Jahnel, Papai et al., 2021, *Cell*; Schmidt, Deyett, et al., 2023, *Cell*; Mendjan et al., 2025, *Nature Reviews*). Our main question is, how does the human heart grow? We hypothesize that key developmental processes, such as trabeculation, compaction, vascularization, and postnatal hypertrophy, must be recapitulated to ultimately generate a mature cardiac organoid model for studying heart disease and developing new therapies. We address these questions across biological scales from the subcellular to the organoid level, combining state-of-the-art imaging (electron, confocal, light sheet, two-photon microscopy), multi-omics (single cell/spatial transcriptomics/proteomics, phospho-proteomics, ATACseq, metabolomics), and whole organoid level analysis (morphometry, Ca²⁺ transients, voltage, contraction). To integrate our findings and generate new predictions and hypotheses, we aim to use multimodal deep learning and new systems analysis frameworks.

Research area

The advertised positions entail working in small teams focused on:

- The establishment of a functional circulation in cardioids by using bioengineering and principles of cardiac coronary vasculogenesis to study cardiac diseases that have not been understood mechanistically in the human context.
- The development of computational tools to integrate cardioid multi-omics (e.g., scRNAseq) and imaging data analysis in collaboration with groups at the AITHYRA institute.
- The establishment of fetal heart-like proliferative growth conditions in cardioids as a proof of principle to study congenital chamber defects and human fetal heart regeneration.

Your profile

- PhD and a strong publication record in vascular biology & bioengineering, computational biology, or cardiac/developmental biology and disease modeling
- Extensive molecular, biochemical, cell, and tissue biology method skills
- Experience in using computational analysis (biostatistics, machine learning, data science, physics, or a related field)
- We value diversity and strongly encourage applications from all qualified individuals, regardless of background, race, gender, or personal identity.

Our Offer:

- A friendly, dynamic, and collaborative environment with state-of-the-art lab infrastructure, core lab funding, and Advanced ERC grant funding
- Extensive collaborative opportunities with other lab members, labs, and institutes
- High-performance life sciences and compute infrastructure with expert facility collaborators
- Opportunities to build outstanding leadership, computational, and experimental skills
- Freedom to develop independent research questions related to the research theme of the lab

- Close mentorship, training opportunities, and career development support
- Diverse social, cultural, and sports activities are organized by the campus and the city
- Excellent benefits, including insurance coverage and health services
- Gross salary of € 73.000 per year plus employers' pension/social benefits
- Funding for 2-5 years, with support and encouragement to apply for fellowships and grants

Our lab is located in one of the leading research institutes and campuses worldwide: IMBA at the Vienna BioCenter (VBC) — see our lab page: [Mendjan Lab at IMBA](#).

Vienna is consistently among the top cities worldwide to live, with an outstanding cultural scene, reliable transportation, quick access to the region's stunning nature and parks, affordable housing and child care, free schools, and top higher education institutions.

Please apply via our **job portal**. Application should include **CV, cover letter of motivation** and **contact details of your referees**.

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IMBA - Institut für Molekulare Biotechnologie GmbH

www.imba.oeaw.ac.at; www.viennabiocenter.org