



Doctoral (PhD) student position in the project “Mechanisms of Amyloid Formation and Inhibition in Parkinson's disease”

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The Department of Biosciences and Nutrition performs research and education in several areas of medical science including bioorganic chemistry, molecular endocrinology, cancer biology, functional genomics, systems biology, epigenetics, structural biochemistry, cellular virology, and nutrition. It offers an excellent international research and working environment, including around 250 scientists, students, administrative and technical personnel. The Department resides in the new biomedical research building Neo, aimed at being a creative and open environment that enables meetings, synergies, and exploration of areas of mutual interest across disciplines.

Do you want to contribute to top quality medical research?

To be a doctoral student means to devote oneself to a research project under supervision of experienced researchers and following an individual study plan. For a doctoral degree, the equivalent of four years of full-time doctoral education is required.

The research group

We are looking for a doctoral student in the research group of Assistant Prof. Axel Abelein and Prof. Jan Johansson. The research group studies protein misfolding and amyloid structures related to neurodegenerative diseases, in particular Alzheimer's and Parkinson's disease, as well as biomaterials. The working space is located in Neo, KI Campus South in Flemingsberg, at the Department of Biosciences and Nutrition. The group consists of one professor, two assistant professors, two senior scientists and six post-docs and PhD students, providing a stimulating and supportive environment for a new PhD student.

More information about the group and research can be found at our homepage:
<https://ki.se/en/bionut/laboratory-for-protein-misfolding-and-assembly>

The doctoral student project and the duties of the doctoral student

This PhD project concerns the study of amyloid formation in neurodegenerative disorders, such as Alzheimer's and Parkinson's disease, and the implication of molecular chaperones, in particular the BRICHOS domain. BRICHOS has excellent properties as an anti-amyloid molecular chaperone, inhibiting amyloid formation and associated toxicity and is hence a promising candidate for novel treatment approaches.

The aims of the project are (I) to better understand the molecular mechanisms of Parkinson's disease and to find potential therapeutic strategies based on BRICHOS and (II) to develop new tools for diagnosis of neurodegenerative disorders.

This PhD project is multidisciplinary and combines protein biochemistry and structural biology in the context of neurodegenerative diseases. For the PhD student this project offers excellent opportunities to perform cutting-edge research in a friendly and inspiring work environment, learn state-of-the-art biochemical and biophysical techniques with the possibility to contribute to the search of new protein-based therapeutics.

The PhD student will perform major parts of the experimental work of this project and will plan the experiments, analyze the data and interpret and summarize the results. The work will be conducted both independently and together with other team members, and the PhD student is encouraged to develop own ideas. Courses of 60 credits related to the research topic are also included in the doctoral project, as well as participating in supervision of undergraduate students and attending international scientific conferences.

What do we offer?

A creative and inspiring environment full of expertise and curiosity. Karolinska Institutet is one of the world's leading medical universities. Our vision is to pursue the development of knowledge about life and to promote a better health for all. At Karolinska Institutet, we conduct successful medical research and hold the largest range of medical education in Sweden. As a doctoral student you are offered an individual research project, a well-educated supervisor, a vast range of elective courses and the opportunity to work in a leading research group. Karolinska Institutet collaborates with prominent universities from all around the world, which ensures opportunities for international exchanges. You will be employed on a doctoral studentship which means that you receive a contractual salary. Employees also have access to our modern gym for free and receive reimbursements for medical care.

Eligibility requirements for doctoral education

In order to participate in the selection for a doctoral position, you must meet the following general **(A)** and specific **(B)** eligibility requirements at latest by the application deadline.

It is your responsibility to certify eligibility by following the instructions on the web page [Entry requirements \(eligibility\) for doctoral education](#).

A) General eligibility requirement

You meet the general eligibility requirement for doctoral/third-cycle/PhD education if you:

1. have been awarded a second-cycle/advanced/master qualification (i.e. master degree), **or**
2. have satisfied the requirements for courses comprising at least 240 credits of which at least 60 credits were awarded in the advanced/second-cycle/master level, **or**
3. have acquired substantially equivalent knowledge in some other way in Sweden or abroad.*

Follow the instructions on the web page [Entry requirements \(eligibility\) for doctoral education](#).

*If you claim equivalent knowledge, follow the instructions on the web page [Assessing equivalent knowledge for general eligibility for doctoral education](#).

B) Specific eligibility requirement

You meet the specific eligibility requirement for doctoral/third-cycle/PhD education if you:

- Show proficiency in English equivalent to the course English B/English 6 at Swedish upper secondary school.

Follow the instructions on the web page [English language requirements for doctoral education](#).

Verification of your documents Karolinska Institutet checks the authenticity of your documents. Karolinska Institutet reserves the right to revoke admission if supporting documents are discovered to be fraudulent. Submission of false documents is a violation of Swedish law and is considered grounds for legal action.

(A) and **(B)** can **only** be certified by the [documentation requirement for doctoral education](#).

Skills and personal qualities

This project covers many areas, including gene cloning and mutagenesis, recombinant protein production and purification, analytical biochemistry assays, optical spectroscopy, protein aggregation kinetics, protein structure determination techniques (NMR, EM) and others. Suitable backgrounds of the candidate include studies in protein biochemistry, biophysics, biotechnology, life science, biomedicine, or similar topics.

The candidate should have theoretical knowledge and practical experience in at least some of the described biochemical and/or biophysical techniques. Experience in working with proteins associated with amyloid formation is advantageous.

The successful candidate is expected to have a strong drive to pursue research, be organized and structured, work independently and have an ambitious and innovative attitude. The project is cross-disciplinary and pursued in collaboration with other research groups, and hence good collaborative skills are necessary. Emphasis will be put on personal skills in the evaluation process. Very good ability to speak and write in English is a requirement.

If you have any questions please do not hesitate to contact the group leaders.

Terms and conditions

The doctoral student will be employed on a doctoral studentship maximum 4 years full-time.

--[Video about Karolinska Institutet, how we all work towards "a better health for all"] -



Application process

Submit your application and supporting documents through the Varbi recruitment system. Use the button in the top right corner and follow the instructions. We prefer that your application is written in English, but you can also apply in Swedish.

Your application must contain the following documents:

- A personal letter and a curriculum vitae
- Degree projects and previous publications, if any
- Any other documentation showing the desirable skills and personal qualities described above
- Documents certifying your general eligibility (see **A** above)
- Documents certifying your specific eligibility (see **B** above)

Selection

A selection will be made among eligible applicants on the basis of the ability to benefit from doctoral education. The qualifications of the applicants will be evaluated on an overall basis.

Karolinska Institutet uses the following bases of assessment:

- Documented subject knowledge of relevance to the area of research
- Analytical skill
- Other documented knowledge or experience that may be relevant to doctoral studies in the subject.

All applicants will be informed when the recruitment is completed.

www.bionut.ki.se

Want to make a difference? Join us and contribute to better health for all

Type of employment	PhD placement
Contract type	Full time
Number of positions	1
Working hours	100 %
City	Flemingsberg
County	Stockholms län
Country	Sweden
Reference number	STÖD 2-3022/2022
Contact	Axel Abelein, Assistant Professor , +46-8-52483542 Janne Johansson, Professor, +46-70-3457048 Thomas Tinglöv, Head of administration, +46-8-52483549
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Published	11.Jul.2022
Last application date	19.Aug.2022 11:59 PM CEST

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