

THE UNIVERSITY OF MANCHESTER
PARTICULARS OF APPOINTMENT
FACULTY OF SCIENCE & ENGINEERING
SCHOOL OF CHEMISTRY

Research Associate
(Application of mass spectrometry tools in monitoring Polymeric N-Acetyl Glucosamine (PNAG) levels during animal feed and biopharmaceutical production)

Vacancy ref: S&E-10913

Salary: Grade 6 - £31,604 to £38,833 per annum depending on experience

Hours: Full Time

Duration: Fixed Term – From 01 February 2018 for 4.5 months

Location: Oxford Road, Manchester

Responsible to: Professor Perdita Barran and Sabine Flitsch

Enquiries about the vacancy, shortlisting and interviews:

Name: Professor Sabine Flitsch

Email: sabine.flitsch@manchester.ac.uk

BACKGROUND

A Research Associate position is available for an outstanding and ambitious Biological or Analytical Chemist to join a multidisciplinary project, *Application of mass spectrometry tools in monitoring Polymeric N-Acetyl Glucosamine (PNAG) levels during animal feed and biopharmaceutical production* (grant agreement IBCarb-PoC-0617-055). The project is awarded by IBCarb Network in Industrial Biotechnology administered by the BBSRC. The project is in collaboration with Eli Lilly and Company (Elanco at Speke Operations, Liverpool) focussed on developing a chromatography and mass spectrometry-based tool that can measure and quantify the amount of PNAG that the Elanco microbial host produces at various points during the fermentation process. This will inform the process production team on optimum strategy to minimise PNAG production and improve overall process yields and purity of biopharmaceutical products and animal feeds.

You should have a PhD or equivalent in Biological or Analytical Chemistry with a proven track record in molecular biology, carbohydrate chemistry, chromatography and mass spectrometry. Expertise in HPLC/UPLC-MS and use of software packages for data interpretation is essential. You should be capable of working under your own initiative but also collaborating with research partners in Elanco so excellent communication and organisational skills are also required. A

short project secondment (approximately 2 weeks) at Elanco is required to obtain the production samples for the project.

JOB DESCRIPTION

Overall Purpose of the Job

A proprietary microbial host is used at Elanco to synthesise and secrete various animal feed enzymes and/or veterinary protein biopharmaceuticals, which are isolated from the fermentation broth following fermentation. Initial data suggests that the microbial host produces Poly N Acetyl Glucosamine (PNAG) during fermentation. The production of PNAG is thought to limit productivity yields and recovery of target proteins. This proposal aims to develop chromatography and mass spectrometry-based tools to measure and quantify the amount of PNAG that the microbial host produces at various points during the enzymatic fermentation production. Quantification will be performed by establishing the limits of detection and generating standard curves for standards around the identified PNAG products. This will inform the process production team on the optimal strategy to minimize PNAG production and improve overall process yields and purity of their biopharmaceuticals and animal feeds.

Main responsibilities

The range of duties will include:

- Conduct individual and collaborative research projects according to the overall needs of the research programme.
- Develop research objectives and proposals for own or joint research with the assistance of a mentor if required.
- Write up research work for publication.
- Continually update knowledge and understanding in field or specialism.
- Translate knowledge of advances in the subject area into research activity.
- Deal with routine communication through a range of media.
- Communicate complex information, orally, in writing and electronically.
- Communicate material of a specialist or highly technical nature.
- Liaise with colleagues and students.
- Attend and contribute to relevant meetings/conferences.
- Analyse and interpret research data and draw conclusions on the outcomes.
- Training students and others in skills appropriate to the project.
- Prepare and present reports on research progress fortnightly and write up research work for publication.
- Assist in public outreach activities.
- Assist in the development of student research skills.
- Be involved in the supervision of projects.
- Continually update knowledge and understanding in the field.
- Ensure the highest standards of health and safety and housekeeping are maintained in the laboratory and comply with all risk assessment procedures. Be aware of the risks in the work environment and their potential impact on their own work and that of others.
- Post holders are required to familiarise themselves with the University's Equality and Diversity policies and to actively support these wherever possible.

Essential Knowledge, Skills and Experience:

- A PhD (or equivalent) in Biological or Analytical Chemistry

- A background in interdisciplinary research and carbohydrate chemistry with an interest in learning new techniques.
- Experience of molecular biology, carbohydrate chemistry, chromatography and mass spectrometry.
- Experience of sample preparation/clean-up prior to chromatography, HPLC/UPLC-MS and software for data interpretation.
- A degree in Biology, Chemistry or similar with practical laboratory experience, or extensive and relevant work experience in a similar technical or scientific role.
- Ability to work collaboratively within a group and also to work independently, with minimal supervision.
- Strong analytical and problem solving abilities, with the ability to learn new skills quickly.
- Contribute to laboratory supervision of PhD students.
- Good time-management skills and organisational abilities.
- Experience in outreach activities.
- Willingness to learn and develop.
- Flexible approach to working and the willingness to travel and work outside normal business hours (if occasionally required).
- Excellent communication and interpersonal skills.
- Ability to liaise confidently and effectively with a range of individuals.
- Ability to present in both written and oral publications.
- Ability to meet deadlines.
- Ability to evaluate complex data.
- Ability to contribute to broader management and administrative processes.
- Ability to assess and organise resources.

Desirable Knowledge, Skills and Experience:

- Knowledge of organic chemistry would be advantageous
- Experience using UPLC-MS
- Previous publications in high impact journals.
- Experience in Glycosciences.