

Plate-based enzyme assays for IgG Fc analysis for patient stratification in auto- and alloimmune diseases

PhD position in glycobiology

Network description

GlySign is a **Marie Curie Innovative Training Network** composed of 3 leading European partners in the fields of glycobiology, glyco-immunology and biomarker research. As a European Industrial Doctorate (EID), it exploits the key translational synergies between excellent academic and non-academic partners to the fullest extent. The **main scientific focus** of the network is **glycomic clinical markers** as well as assay development for **Precision Medicine (PM)**. We aim to **bring known glycomics markers to the clinic**.

Project description

Research will be carried out at Ludger Ltd. (UK). A substantial part of the training (approx. 1 year) will be also carried out at the Center for Proteomics and Metabolomics (CPM) at the Leiden University Medical Center (LUMC) in Leiden, the Netherlands, with a possible secondment at Proxomix Ltd. (UK).

The aim of the project is the development of a prototype plate-based enzyme kit for fast high-throughput patient stratification in inflammatory diseases. Critical glycan biomarker features relevant to IgG sample analyses will be identified, while the corresponding enzymes (exoglycosidases and/or redox enzymes) will be sourced and be produced in bulk, purified and tested for suitability in plate-based assays. Serum IgG purification methods will be optimized for robotization (Hamilton robots), to be coupled with MS platform approaches to IgG analyses. Lastly, inflammatory disease patient cohort samples will be robotically transferred to the prototype plate-based assay for analysis. Data will be processed for patient stratification based on glycosylation signatures.

The candidate will receive training in robust sample preparation; enzyme use in glycoanalysis; plate-based fluorescence measurements of samples; kit prototype development under ISO9001/ GMP type lab conditions; GMP / ISO9001 type work practices; novel recombinant enzyme discovery; protein expression/purification; measurement of enzyme kinetics/specificity; MALDI-MS, LC-MS; Hamilton robot sample handling; assay validation; data analysis for patient stratification techniques; scientific writing as well as non-academic reporting; Teaching and mentoring a Bachelor's/Master's student is also part of the experience the candidate will gain.

This is a multidisciplinary project comprising several European laboratories with different expertise.

The successful candidate will participate in the network's training activities and work placements at the laboratories of the participating academic and industrial teams. Regular meetings and workshops within the EU-funded GlySign will supplement the training and support provided at the LUMC in Leiden, The Netherlands. Marie-Curie projects are embedded in a comprehensive program of courses and Exchange visits between the partner institutions.

The candidate, at the end of the project, will produce a validated prototype kit for IgG analysis of patient cohort samples within a GMP type working environment. In addition, mass spec analytical skills will be acquired

Appointment details

The candidate will be employed by Ludger Ltd. (UK) for the duration of 36 months, with substantial time spent at the Leiden University Medical Centre (LUMC) in Leiden, the Netherlands, where the candidate will be enrolled in the local PhD programme.

Requirements

The candidate should hold a Master's degree in life sciences (e.g. biochemistry or biology) or analytical chemistry. Experiences in bioassays, enzymes, laboratory automation and/or mass spectrometry are highly desired. A good level of English (spoken and written) is mandatory. The candidate should be a good communicator with the ability to develop work relationships and have strong analytical skills particularly with an attention to detail. They should be an independent thinker with a proven ability to project manage their work and meet deadlines. They should be able to work efficiently as part of a team and to build upon our collaborations.

Eligibility according to EU regulations

Please be aware that candidates should comply with the general mobility criteria for Marie Curie early - stage researchers. In particular, the fellows to be appointed must not have resided or carried out their main activity in the host organization's country for more than 12 months in the 3 years immediately prior to the appointment date. Short stays such as holidays are not taken into account. Early-Stage Researchers (ESRs) shall, at the time of recruitment by the host organisation, be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree.

How to apply

Application should include a CV and a cover letter stating motivation and expectations from participation in GlySign, and listing the names of two referees. Applications sent via email will not be taken into consideration. To apply, click [here](#).

For questions contact

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<http://www.ludger.com>