



In vitro and in vivo studies of the role of Lewis antigens in selectin binding and transendothelial migration

Job Title: PhD position in Biology

Job Summary:

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 GlyCoCan will supplement the training and support provided at the Faculdade de Ciências e Tecnologia, Universidade NOVA de Lisboa, Portugal. In the first part the candidate will identify and isolate selectin ligands. Then, using specific in vitro and in vivo assays, he/she will address the role of such selectin ligands into the binding of CRC cells to leukocyte and to endothelium. Effect on the metastasizing profiles of CRC cells will also be assessed.

Job Description:

Objectives and Methods:

1. Identification and isolation of selectin ligands. Training: Analyse cell growth and invasion of established cell lines with differential Lewis antigen expression (secondment UNIBO). Analysis of selectin ligands by flow cytometry, immunoblotting and immunoprecipitation using E-, P- and L-selectin chimeras and antibodies. Functional analysis by Blot rolling assays. Mass spec analysis to identify protein scaffolds (secondment LUMC) and confirm glycans acting as selectin ligands (secondment LUDGER).
2. Assessing in vitro the impact of binding to endothelial and leukocyte selectins and adherence to human endothelium. Training: Cell transmigration using co-cultures with HUVEC or selectin-expressing CHO cells. Analysis of phosphoproteins by immunoblotting: Akt and ERk1/2 signalling pathways in CRC cells engaged on selectins.
3. Assessing on human dendritic cells, the functional impact of binding CRC selectin ligands through its L-selectin receptor. Training: Assays for selectin binding, cytokine expression and T cell activation.
4. To develop luciferase expressing cell line models of CRC cell lines, with different Lewis antigens and use them to assess CRC migration and metastasis in vivo in immunosuppressed mice. Training: use of lentiviral expression system, animal manipulation and ethical aspects of animal experiments, data analysis and preparation for publication.

Expected Results:

- Elucidating the molecular effectors on CRC cells that bind endothelial and leukocyte selectins.
- Establishing in vivo models to study and modulate metastising profile of CRC cells.
- Insight into the role of CRC glycosylation in cell migration, cell growth and immune modulation.
- Training: A researcher with expertise in glycobiology and immunology, with additional experience in GMP-compliant industrial analytical workflows

Planned secondments:

1. UNIBO – ESR – 3 months: In vitro techniques for characterization of a cancer cell line.
2. LUMC – ESR– for 3 months: Identification of the selectin ligand protein scaffolds.
3. LUDGER – ESR – for 2 months: Identification of the selectin ligand glycans.

Number of positions available: 1**Research Fields:** Medical sciences**Career Stage:** Early stage researcher or 0-4 yrs (Post graduate)**Research Profiles:** First Stage Researcher (R1)**Benefits**

The selected candidate will be appointed under a 36-months full-time employment contract with full social security and fiscal coverage, as foreseen by the Portuguese national legislation. The remuneration will be compliant with the rules of the ITN-MSCA, as by the Marie Skłodowska-Curie Actions Work Programme 2014-15, 'European Union Contribution and Applicable Rates'. The gross amount per year of the allowances includes the salary (37320€*country-specific correction coefficient-PT), the mobility allowance (7200€) and a family allowance if eligible (6000€). These gross amounts include all compulsory deductions under national applicable legislation (taxes depend on the country of the host institution).

Type of Contract: Fixed-term (Other on EURAXESS publication)**Status:** Full-Time**Working Hours (hours per week):** 40 hours/week



Company/Institute:

Nova.id.FCT – Associação para a Inovação e Desenvolvimento da FCT
Campus de Caparica
2829-516 Caparica
Portugal

Closing Date: December 23rd, 2015

Comment/web site for additional job details

<https://glycocan.eu/phd-positions/>

If you are interested and you satisfy the requirements in the job profile, we encourage you to send your application. This should include a CV, copies of academic degrees received and a cover letter including motivation and expectations from participation in GlyCoCan and the names of two referees.

For further information, please contact:

Paula Videira, Assistant Professor, Faculdade de Ciências e Tecnologia, Universidade NOVA de Lisboa, Portugal.

- email: p.videira@fct.unl.pt
- Tel: (+351) 21 294 85 30
- Fax: (+351) 21 294 85 30
- <http://cedoc.unl.pt/glycoimmunology/>

Or Andreia Domingues, R & D Project Manager, NOVA.id.FCT - Associação para a Inovação e Desenvolvimento da FCT, Portugal.

- email: gestao3@novaidfct.pt

Requirements

1. Required Education Level
Degree: Master Degree
Degree Field: Biological Sciences

2. Required Languages
Language: English
Language Level: Good

3. Additional Requirements

General evaluation criteria will be the following:

- Educational background relevant for the chosen position.
- Previous research experience relevant to the chosen position.
- Language skills (good oral and written communication skills in English is compulsory).
- Networking and communication skills (to be evaluated during the interview).
- Willingness to travel abroad for the purpose of research, training and dissemination.

4. Eligibility requirements

ESR appointment is full-time, fixed-term for 3 years.

Candidates matching the required profile for the available position will be interviewed until a successful candidate is appointed.

There are strict eligibility rules associated with the recruitment of Early Stage Researchers in Marie Curie Initial Training Networks.

Career: At the time of recruitment, applicants for the ESR post must be in first 4 years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree.

Full-time equivalent research experience is measured from the date when an ESR applicant obtained the degree which formally entitled him/her to embark on a doctorate, either in the country in which the degree was obtained or in the country in which the researcher is recruited, irrespective of whether or not a doctorate was envisaged.

Mobility: Trans-national mobility (i.e. move from one country to another) is an essential requirement of Marie Curie Training Networks. At the time of recruitment by the host organization, researchers (ESR) must not have resided or carried out their main activity (work, studies, etc) in the country of the host organisation for more than 12 months in the 3 years immediately prior to the date of recruitment. Compulsory national service and/or short stays such as holidays are not taken into account.

Secondments: Applicants must also be prepared to be seconded for a total duration of up to nine months to other network partners to carry out part of their research and training work.

Language: A good knowledge of the English language is required, fluent speaking and writing, and it will be evaluated during the selection process.