



Development and in vitro and in vivo validation of novel antibodies for Lewis antigens

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 evaluate existing antibodies for in vitro anti-tumor efficacy. Will also participate in the development of new antibodies, obtained by phage display library or hybridoma technology. Newly antigens will be characterized in vitro and in vivo. A luciferase-expressing CRC cell lines will be developed to be used as xenografts in animal models.

Job Description:

Objectives and Methods:

1. Evaluation of existing antibodies to Lewis antigens for in vitro anti-tumour efficacy.
Training: Testing the efficacy of existing mouse and humanized antibodies in co-cultures of immune cell plus cancer cells (from the same animal species as antibodies). Natural killer (NK) mediated cell lysis. T lymphocyte mediated killing (includes dendritic cell (DC) activation and T cell priming assays). Cytokine expression. Manuscript writing.
2. Development of novel antibodies by immune phage display antibody library.
Training: Apply highly defined glycopeptide antigens from MPIKG. Preparation of lysates from isogenic cancer cell lines with different expression of Lewis antigens (secondment VUA). Phage Display screening (secondment IBET) or hybridoma technology. IgG reformatting.
3. Characterisation and evaluation of novel antibodies against Lewis-glycopeptides.
Training: Affinity screening on relevant cancer cell lines by flow cytometry and immunofluorescence and on relevant antigens by ELISA and Western blot. Immunohistochemistry on CRC patient's tissue (secondment IPO).
4. Evaluation of novel antibodies to Lewis antigens for in vitro anti-tumour efficacy.
Training: Testing selected novel antibodies in vitro (as objective 1).
5. To develop luciferase expressing cell line models of CRC cell lines, with different Lewis antigens (s. also ESR 8), and use them as xenografts in animal models to evaluate efficacy of novel antibodies. Training: use of lentiviral expression system, animal

manipulation, in vivo bioluminescence imaging. Xenograft of cancer cell lines into immunocompetent mouse (in case of mouse antibodies) or immunosuppressed mice (in case of humanized (IgG formatted) antibodies).

Expected Results:

- Throughout evaluation of the therapeutic potential of existing anti-Lewis antibodies.
- Novel antibodies against Lewis antigens with improved specificity to target CRC cells.
- Understanding of the diagnostic and therapeutic potential of novel antibodies.
- Training: A researcher practiced in antibody development techniques with experience in academic and industrial diagnostic cancer research and publishing, with additional knowledge of in vivo techniques

Planned secondments:

1. VUA – ESR – for 3 months: Preparation of antigens for antibody development.
2. IBET – ESR – for 3 months: Phage display library screening methodology.
3. IPO – ESR – for 3 months: Immunohistochemistry screening of patients' tissue.

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.