Announcement of post-doc scholarship at the Department of Clinical Sciences, division Surgery and Oncology/Pathology

Neo-antigens identification for immunotherapy in locally recurring breast cancer

We are seeking a highly motivated postdoctoral scientist to join a collaborative project between three research groups headed by Emma Niméus, Lars Malmström and Johan Malmström from Lund University. The research collaboration involves scientists from Department of surgery at the Region Skåne University hospital and Department of Oncology, Lund University and center of excellence in biological and medical mass spectrometry. Through the formation of an interdisciplinary research activity including expertise ranging from physicians, mass spectrometry experts and bioinformatics, the goal of the project is to discover neoantigens in locally recurring hypermutated breast cancer tumors using novel proteogenomics research strategies.

Breast cancer is the most common malignancy among women in the Western world, affecting approximately every tenth woman. A local recurrence (LR) is a recurrence in the same breast as the primary tumor and implies an increased risk of both distant recurrences and mortality. Detection of local recurrences represents a therapeutic opportunity that can be exploited for treatment adjustments to prevent the development of distant recurrences, which is currently considered a non-curable disease. Recent developments in breast cancer therapy involving actionable cancer mutations and the body’s immune system have opened up new avenues for reducing the death rate further (Makhoul, Atiq, Alwbari, & Kieber-Emmons, 2018). Various strategies are being tested to harness the power of the immune system to induce immune dormancy or to eradicate the breast cancer by either activating/enhancing the immune response via vaccines, monoclonal antibodies, adoptive transfer of T cells transgenic for T-cell receptors and stimulatory molecule agonist antibodies, or by reversing cancer induced local immunosuppression via checkpoint inhibitors.

The goal in the outlined project is to use novel proteogenomics strategy accelerate the identification of surface exposed neo-antigens that can be explored as new targets for the next generation immunotherapies in breast cancer. The proteomics analysis will be performed using several quantitative mass spectrometry techniques using instruments such as Q-Exactives and the Fusion available at Lund University
Reference number: V 2020/334

Scholarship period: The scholarship covers a period of 6 months with possibility of prolongation up to a maximum of 24 months in total.

Preliminary start date: To be discussed.

Supervisor/contact person: Emma Niméus, emma.nimeus@med.lu.se
Phone: +46766322154

Qualifications:

To be eligible for a post-doc scholarship at Lund University the recipient must hold a PhD degree within a relevant field. The PhD degree must not be from Lund University. The PhD degree must not be older than three years. The applicant must not have been employed at Lund University in the past two years.

- Candidates are expected to have experience in all of the following subjects:
  - PhD in biology, bioinformatics, computer science or similar
  - Prior mass spectrometry-based proteomics experience
  - Experience with any of the following will be considered an advantage:
    - Prior NGS sequence analysis experience
    - Experience in tumor immunology
    - Bioinformatics skills

Written application, including reference number, is to be sent via e-mail to the supervisor and must include the following:

- CV
- Personal letter stating the reasons why the study suits the applicant (maximum one page)
- List of publications
- References (2)
- PhD diploma

Application deadline: 10 December 2020
Information regarding scholarships at Lund University

The scholarship sum is paid out quarterly
- A scholarship awarded will be reviewed every six months
- Scholarships are tax-exempt
- Scholarships do not give rise to sickness benefits, compensation from the Social Insurance Office or retirement pension.
- A scholarship holder cannot be hired after the scholarship period due to tax reasons.
- The scholarship follows the regulations established by the Vice-Chancellor of Lund University (June 27th 2013; Reg. No PE 2013/356).