VACCINE RESEARCH INSTITUTE

UPEC UNIVERSITÉ PARIS-EST CRÉTEIL FACULTÉ DE SANTÉ

IMRB INSTITUT MONDOR DE RECHERCHE BIOMÉDICALE

Job position: Post-doctoral Researcher

AFFECTATION(S)

VRI – Inserm U955

RESPONSABLE

Yves LEVY

EQUIPE : VRI – Inserm U955
NOM DU RESPONSABLE :
Pr Yves LEVY
TEL. +33(0)6 10 39 52 31
MAIL : yves.levy@inserm.fr
ADRESSE :
VRI-U955
Bâtiment de recherche biomédicale (BRB), 1er étage,
8 rue du Général Sarrail
94010 CRETEIL

Context of the job offer

The Vaccine Research Institute (VRI), LABEX created in 2011 based on a project co-led by the ANRS and the Université Paris-Est Créteil, has the mission of accelerating the development of vaccines against HIV and (re-)emerging infectious diseases. The VRI brings together multidisciplinary teams focused on novel vaccine platforms, innovative clinical trials, and translational research that bridges the gap between the laboratory and the hospital.

Summary of the research project

The aim of this project is to propose an innovative vaccine strategy based on a messenger RNA (mRNA) vaccine platform coding a humanized antibody optimized for both targeting dendritic cells and activating B and T cells, with the ability to deliver antigens. It is based on the proof-of-concept study of VRI showing that optimized anti-human CD40 mAb fused to antigens triggers strong and long-lasting B and T cell responses and antiviral control in specific models. We are proposing to produce the vaccine as mRNA platform since it holds several advantages. The mRNA production process is simple, rapid, and low cost compared to proteins. Moreover, mRNA is endowed with an intrinsic adjuvant feature beneficial for the immune response activation and has a low risk of toxicity. Once built, this mRNA platform will also allow us to encode various antigens, with a flexibility in integrating all required antigens together. The vaccine will be formulated as LNP for systemic and mucosal administration. Mucosal route of administration could further increase the duration, polyclonality and specific location of the immune response at the local site of infection.
Having both protein- and mRNA-based platforms available will give us the opportunity to assess prime/boost combinations as it could result in an improved vaccination effect.
The foremost goal of our project is the implementation of a robust, feasible and cost-effective novel CD40 targeted mRNA vaccine platform, which can be translated to any type of antigens opening its use in different types of applications.

Missions

The recruited postdoctoral researcher will be in charge of the following missions:

- Evaluation of the immunogenicity of mRNA.CD40 constructs in preclinical models
- Deciphering mechanisms of actions of mRNA.CD40 (expression of antigens, demonstration of the CD40 targeting effect)
- Set up a challenge model to demonstrate the effectiveness of the vaccination strategy.

Skills

Immunology – Molecular and cellular biology
Handling of preclinical models; Ex vivo and in vitro studies of T and B cell responses;
Use of FACS Aria and FACSymphony systems
Flexibility, autonomy, teamwork skills, and strong organizational

Requirements

- Hold a PhD of Science and a Level 1 authorization for animal experimentation, with research experience in immunology (T and B cell responses) using preclinical models.

1-year fixed-term contract (CDD), with possibility of renewal

APPLICATION (CV and cover letter) to be sent to:

Pr Yves LEVY: yves.levy@inserm.fr
Pr Chantal Pichon : chantal.pichon@inserm.fr

Contact VRI :
LAURENT HANOT
Secrétaire Général / Secretary General
Vaccine Research Institute