



MedImmune, Inc.

Job Description

Position #SWB16ADPE

Job Title: Postdoctoral Fellow – Science without Borders

Site: MedImmune, Cambridge, UK

Department: Research-Antibody Discovery and Protein Engineering

Duration: 2 years

We are seeking a highly motivated postdoctoral fellow to join the Department of Antibody Discovery and Protein Engineering (ADPE) at MedImmune's Cambridge, UK site and lead an independent research project focused on delivering autophagy modulating peptides intracellularly to their site of action via an antibody targeted approach. The research will be conducted in MedImmune's state-of-the-art laboratories and will drive innovation in order to achieve MedImmune's vision to advance science and medicine to help people live better lives. The project will be run in collaboration with Professor David Rubinsztein a world leader in autophagy and neurodegeneration at the Cambridge Institute for Medical Research (UK). The successful candidate will benefit from daily interaction with highly accomplished scientists with whom they will collaborate. The position offers a unique opportunity for a talented scientist to work in a dynamic and innovative environment and to develop their career at the interface of basic research and drug discovery.

Major Duties and Responsibilities:

The successful candidate will use protein engineering, along with molecular and cellular biology techniques to determine what is required for the successful delivery of biologically active peptides to the cytoplasm to modulate the cell's autophagy processes. The candidate will be responsible for designing and conducting his/her research work independently and collaboratively. The candidate will also be expected to communicate and present findings both internally and externally through seminars, conferences and publication in high impact journals.

Requirements/Qualifications:

Nationality: Brazilian citizenship or permanent residency

Education: PhD in a life sciences related discipline

Experience: Doctoral and/or Post-Doctoral research

Special Skills/Abilities:

- Demonstrable ability to conduct a high level research project.
- Candidates with prior practical experience in protein engineering, molecular and cell biology are strongly encouraged to apply. Experience in intracellular antibody/peptide delivery is a plus.
- Knowledge of autophagy is desirable.
- Strong organizational skills and ability to multi-task with creative and critical thinking. The ability to work independently as well as collaboratively is essential.
- Strong verbal and written communication skills.

Project Summary:

Autophagy is a housekeeping function that eliminates unwanted proteins and organelles from cells. Perturbations in autophagy function are associated with many diseases in man e.g. metabolic disease, neurodegeneration, pathogen infections, cancer etc. In neurodegenerative diseases such as Parkinson's and Alzheimer's, for example, a deficit in clearance of over-expressed proteins in neurons in the brain leads to their accumulation in the autophagy/lysosome pathway; these proteins now in close proximity and high concentration aggregate leading to toxicity, neuron loss and ultimately patient death. This proof of concept study utilizing Beclin-1 peptide, an autophagy stimulator (Shoji-Kawata et al., 2013), will show that we can specifically protect neuronal cells from this toxic insult by stimulating autophagy and helping to clear the accumulation of an over-expressed toxic protein, α -synuclein – the key toxic protein in Parkinson's disease.

Hyper stimulation of the autophagy system can lead to cell death as reported for the FLIP peptide (Lee et al., 2009). The second proof of concept study will incorporate this peptide in a novel antibody drug conjugate (ADC). We will show that this is an attractive alternative approach to killing cancer cells using a breast cancer model and an anti-her2 antibody as an example. Targeting alternative mechanisms of cell death will broaden the potential repertoire of ADCs, bringing disease modification where drug resistance mechanisms may occur with traditional DNA targeting ADC warheads.

This project represents an exciting and novel approach, employing antibodies to directly target diseased cells with autophagy modulators to effect disease modification.

Application Instructions:

Please note that these postdoctoral positions are advertised under an AZ/MedImmune partnership with Brazilian Science without Borders (SWB). If you are interested in any of these positions, please apply through the SWB website specifying the position number, [click here](#).