

Nguyen Duc Trong - Vrije Universiteit Brussel – Belgium

Msc. Nguyen Duc Trong is currently carrying out his doctorate thesis with the topic: “Development and application of nanobody based chromatin immuno-precipitation (ChIP) followed by genome-wide analysis” under the guidance of Prof. Serge Muyldermans at Department of Cellular and Molecular Immunology (CMIM) - Vrije Universiteit Brussel – Belgium. Trong completed his doctorate thesis in 2012.



Campus of Vrije Universiteit Brussel

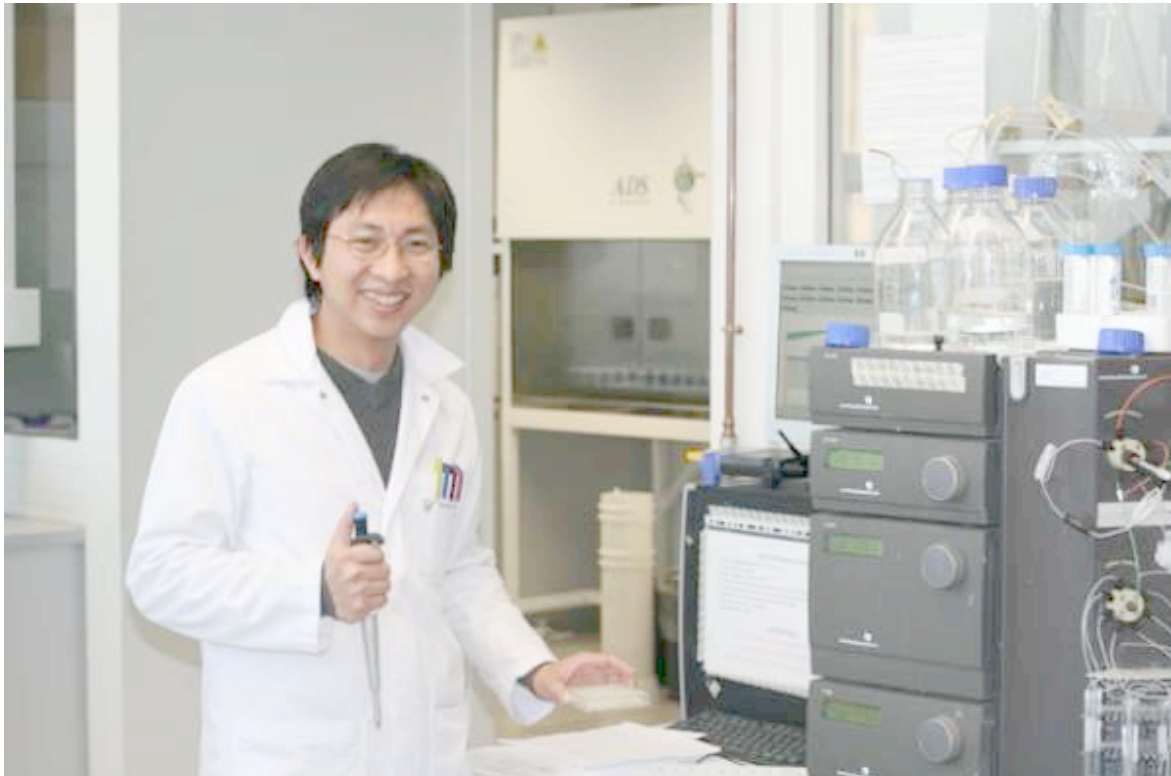
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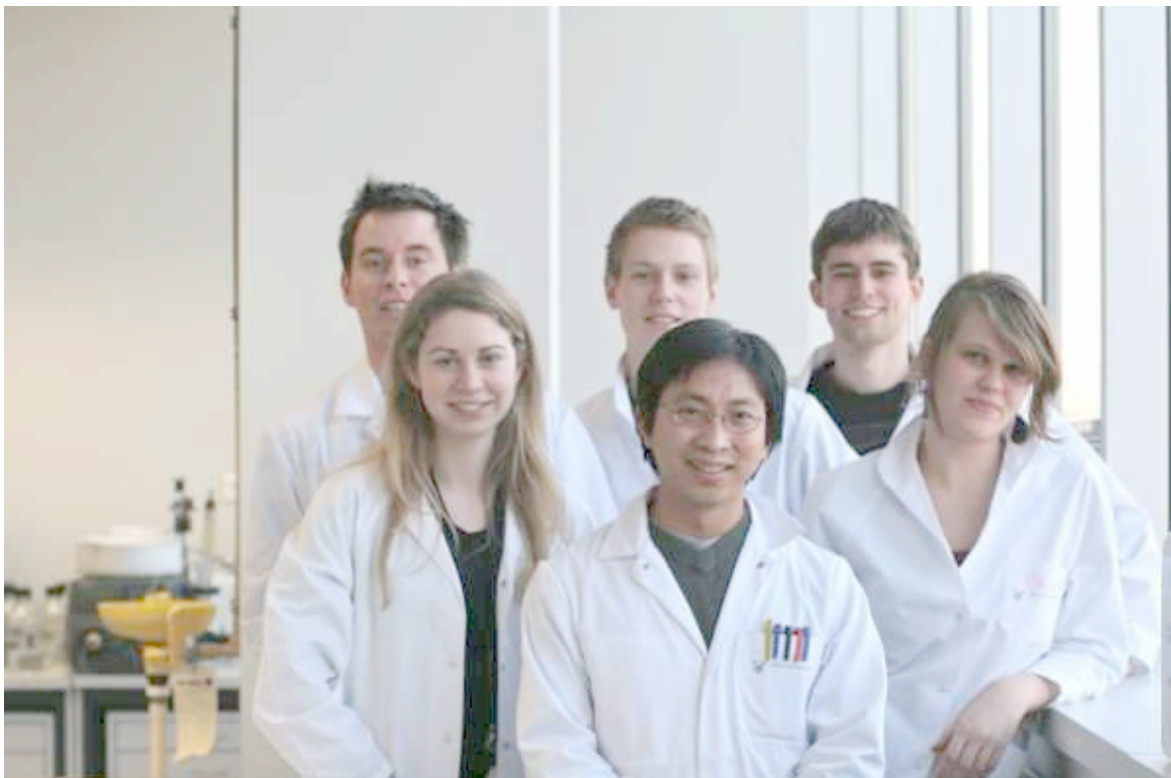
The research in the regulation of Gene Expression, at molecular level, can contribute the vital information, which will elucidate the mechanism of life processes such as reproduction, development, differentiation, aging, diseases... In living cell, gene expression is controlled by TFs (Transcription factors). These TFs are mainly proteins, which have high affinity for DNA and bind to chromosome at specific sites, where they play the role in activating or inhibiting the expression of one or many genes. Identifying the binding site of TF (X) promotes knowing the genes regulated by it and the effect of X on the life processes. If X is a pathogenic factor, the collected information will contribute to the development of new therapies as well as new medicines for treatment.

One of the most popular and effective methods to determine the binding site of TFs on chromosome is “Chromatin immunoprecipitation followed by genome-wide analysis”. The antibodies play a crucial role in the success of this method. However, these current forms of antibody reveal many drawbacks. Therefore, searching for new forms of

antibody appropriate with this method is absolutely essential. Nanobody is a kind of recombinant antibody that has many advantages in case of applying in this issue.

The objective of Trong's doctorate thesis is establishing and applying nanobody in "Chromatin immunoprecipitation followed by genome-wide analysis" (ChIP assay).





Nguyen Duc Trong in Vrije Universiteit Brusel