



## PhD Program between the Freie Universität Berlin (FUB) and the China Scholarship Council (CSC)

### Open PhD position at FUB for CSC scholarship candidates 2016

*Please note: the PhD position is only offered to Chinese PhD candidates for application in the framework of the FUB-CSC PhD Program.*

<b><u>Department/Institute:</u></b>	Institute for Virology
<b><u>Subject area:</u></b>	Infectious Diseases
<b><u>Name of Supervisor:</u></b>	Prof. Dr. Benedikt KAUFER (Mr.)
<b><u>Number of open PhD positions:</u></b>	1
<b><u>Type of the PhD Study:</u></b>	Full-time only
<b><u>Project title:</u></b>	Herpesvirus integration

#### **PhD Project description:**

Herpesviruses are ubiquitous pathogens causing serious diseases in humans and animals. After the initial lytic infection, herpesviruses establish a quiescent (latent) infection, which allows them to persist in the host for life. We and others recently identified a novel mechanism that allows maintenance of the genome of certain herpesviruses during latency, by integrating their complete genetic material into host telomeres. One of these viruses is human herpesvirus 6 (HHV-6) that causes the febrile illness termed roseola infantum (Sixth Disease) that can be accompanied by seizures and encephalopathy. Reactivation of HHV-6 from latency is associated with various clinical syndromes including encephalitis, multiple sclerosis and graft rejection. In addition, HHV-6 can also integrate its genetic material into germ cells and is transmitted from parent to offspring. This vertical transmission of HHV-6 is observed in approximately 1% of the world's population, resulting in individuals that carry the HHV-6 genome in every nucleated cell of the body, while the biological and medical consequences of this condition are poorly understood. Furthermore, the exact mechanism of HHV-6 reactivation and mobilization of the virus genome during reactivation remains elusive. In this project, we will determine host and virus factors involved in integration and reactivation. We will initially knockout viral and cellular factors that we predict to be involved in the integration process. This targeted approach will be complemented by an unbiased genome-wide knockout approach to determine which cellular factors are involved in suppression and initiation of reactivation.

#### **Language requirements:**

English: higher than IELTS 6,5 or TOEFL 95 ibt

**Academic requirements:**

- Masters of Science
- Extensive experience in infectious disease research (optimally virology)
- Extensive experience in molecular biology (cloning, PCR, aso.)

**Information of the professor or research group leader:**

Molecular mechanisms of herpesvirus latency and pathogenesis:

The major interests of my laboratory are the molecular mechanisms of latency and pathogenesis for various herpesviruses including varicella-zoster virus (VZV), Human Herpesvirus 6 and Marek's disease virus (MDV). Over the years, we have developed a number of genetic systems for herpesviruses including the bacterial artificial chromosome (BAC)-based genetic system for VZV. These BAC systems allow the stable maintenance and manipulation of the herpesvirus genome in E.coli. Furthermore, we developed a mutagenesis system that facilitates the manipulation of herpesvirus genomes in any desired manner. This technique allowed us to generate a plethora of recombinant herpesviruses and is commonly used in the research field.

<http://www.vetmed.fu-berlin.de/en/einrichtungen/institute/we05/arbeitsgruppen/tumorigenese/research/index.html>

**Please note:**

In a first step the complete application should submit to the Beijing Office for evaluation by January 4<sup>th</sup>, 2016. Please don't contact the professor before. He/She will get in contact with you after having received the complete application in January.