



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

Open PhD position at FUB for CSC scholarship candidates 2018

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

<u>Department/Institute:</u>	Institute for Virology
<u>Subject area:</u>	Infectious Diseases
<u>Name of Supervisor:</u>	Prof. Dr. Benedikt Kaufer
<u>Number of open PhD positions:</u>	1
<u>Type of the PhD Study:</u>	full-time
<u>Project title:</u>	Herpesvirus integration: Deciphering the role of the DNA damage machinery in virus replication, latency and reactivation.

PhD Project description:

Several herpesviruses including the oncogenic Marek's disease virus (MDV) integrate its genome into host telomeres during latency. This process is facilitated by telomeric repeats present at the ends of the genome of these viruses. Linear (herpes)virus DNA is usually recognized by the cellular DNA damage machinery as DNA breaks, which can result in cell cycle arrest and apoptosis. Intriguingly, several viruses are able to inhibit or subvert DNA damage responses (DDR). We recently observed that MDV can induced DNA damage upon infection, suggesting that DNA damage could be beneficial for the virus. However, it remains completely elusive how telomere-containing herpesviruses deal with DNA damage and DDR. We hypothesize that telomere herpesviruses (MDV) are harnessing the DNA damage response (DDR) throughout the virus life cycle. This will be addressed in two Specific Aims by determining: 1) the virus-induced DNA damage/DDR activation pattern and the role of viral telomeres in altering this response; 2) the role of DNA damage in viral life cycle including replication, integration and virus reactivation. This project will exploit state-of-the-art DDR assessment techniques and novel in vitro infection and integration systems to obtain an insight into the life cycle of these telomere herpesviruses including integration and reactivation.

Language requirements:

TestDaf: 16 oder DSH 2
IELTS: 6,5 oder 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 (website, awards etc.):

*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/>

Please note: In a first step, the complete application must be submitted to the Beijing Office for evaluation by January 4th, 2018. Please do not contact the professor before. He/She will get in contact with you after having received the complete application via the Beijing Office in January.