OPEN POSITION for a postdoctoral fellow in the research group of Ralf Bartenschlager

The Bartenschlager group is studying molecular and cell biological aspects of virus infections with a focus on activation of the innate antiviral immune response and viral countermeasures as well as the cross-talk between innate and adaptive immunity. While most of our studies are dedicated to hepatitis C virus and hepatitis B virus, our main interest is to decipher the fundamental principles of the immune response. To reach this goal we are using a combination of biochemical and cell biological approaches as well as cutting-edge imaging techniques such as live cell imaging and correlative microscopy. Further information about our research can be found at:
https://www.klinikum.uni-heidelberg.de/Molecular-Virology.104862.0.html
https://www.dkfz.de/en/virus-assoziierte-karzinogenese/index.php

As part of these research activities we are looking for a postdoctoral fellow to work on "Activation of the interferon response by hepatitis C virus and impact on adaptive immunity"

Infections with hepatitis C virus (HCV) and hepatitis B virus (HBV) are major risk factors for serious liver diseases and account for a total of ~450 mio chronic infections worldwide. In spite of mild symptoms during acute infection, the main problem is chronicity causing on the long term serious liver damage and eventually hepatocellular carcinoma. Thus, understanding viral persistence and devising strategies to break persistence will avoid the long-term sequelae of these infections. In case of HCV we have recently identified IFN-stimulated genes responsible for suppressing viral replication (Metz Hepatology 2012) and proposed that HCV persistence is mediated, at least in part, by exploiting (i) the stochasticity of the IFN system (Bauhofer Gastroenterology 2012) and (ii) the dynamics of RNA translation (Ruggieri CHM, 2012). Moreover, we found that the signalling molecule MAVS is efficiently cleaved proteolytically by the viral NS3 protease (Meylan Nature 2005), thus blunting the IFN response. Although the viral protease blocks MAVS independent of its subcellular localization (Bender et al., 2015), HCV is highly sensitive to the antiviral activity of IFN, which is induced primarily via activation of MDA5 (Hiet J Hepatology 2015). We also found that strong antiviral T cell immune response selects for CD8 T cell escape mutations that have a limited repertoire owing to fitness cost (Dazert et al., J Clin Invest 2009).
Within the newly found transregional collaborative research center TRR179 we aim to elucidate the molecular mechanisms by which HCV is activating the IFN response, which contributions distinct SNPs in the IFN-lambda gene locus have and how long-term activation of this response affects T cell immunity. Applied techniques include, beyond the routine molecular and cell biology methods, T cell culture and co-cultivation systems (Jo et al., Gastroenterology 2009), comparative transcriptional and translational profiling, isolation and analysis of protein complexes as well as functional follow-up studies using stable knock-down and knock-out approaches.
The candidate holds a Ph.D. (or equivalent degree) in immunology, biology or biochemistry and has profound expertise in cell biology and immunology. Experience in cultivation and analysis of T cells as well as transcriptional and translational profiling is highly desired. The candidate must know the basic methods in molecular and cell biology (e.g. cell culture, transfection of cells, PCR, DNA cloning, Western blot) and have experience with basic fluorescence microscopy. Experience in working with viruses is a plus. Strong motivation and enthusiasm for the project as well as high accuracy and reliability are required. Excellent communication and team skills are mandatory.

References:
Metz et al., Hepatology, 2012, 56(6):2082-93; Bauhofer et al., Gastroenterology, 2012, 143(2):429-38; Ruggieri et al., Cell Host & Microbe, 2012, 12(1):71-85; Meylan et al., Nature, 2005, 437(7062):1167-72; Hiet et al., J Hepatology, 2015, 63(4):829-37; Bender et al., Plos Path 2015, 20;11(11):e1005264; Dazert et al., J Clin Invest, 2009, 119(2):376-86; Jo et al., Gastroenterology, 2009, 136(4):1391-401.

The position is open immediately and embedded within the newly funded transregional collaborative research center (TRR) 179. Funding is secured for three years. An extensions is possible.

Applications must comprise:

1) a detailed CV, including an abstract of the master's or PhD thesis and copies of the graded certificates
2) a description of research experiences including applied methodologies
3) a list of three references with complete contact details
4) a short (~one page) letter focusing on the candidate's scientific interests and motivation

Applications should be sent by email no later than July 30, 2016 to **Ralf Bartenschlager:** Ralf_Bartenschlager@med.uni-heidelberg.de

Heidelberg is a very active and lively center for research in the field of life sciences and medical research (http://www.uni-heidelberg.de/index_e.html). It is one of the leading centres in virus research, cancer research, systems biology and imaging techniques in Europe. The campus provides unique opportunities for basic research in life sciences and is well connected to several institutions such as the German Cancer Research Center (DKFZ), the European Molecular Biology Laboratory (EMBL) and the Max-Plank Institute for Medical Research.