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Personalized adoptive T-cell  
transfer of Virus-specific T cells:  
Basics and future opportunities

**18. Jun**  
**17:00 CET**



**First joint YI and jGfV  
Seminar Series  
June 2024**



Online event



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**Personalized adoptive T-cell transfer of Virus-specific T cells: Basics and future opportunities**

**Abstract:**

Immunosuppression following allogeneic haematopoietic stem cell transplantation (HSCT) or solid organ transplantation (SOT) is often complicated by severe and life-threatening viral complications. In most cases, these are infections or reactivations caused by persistent herpes viruses such as human cytomegalovirus (CMV), Epstein-Barr virus (EBV) and human herpesvirus 6 (HHV6) as well as lytic viruses such as human adenovirus (AdV) and human polyomavirus type 1 (HPyV-1, BKPyV, BKV). One of the life-threatening viral complications in non-transplanted immunosuppressed and immunodeficient patients is progressive multifocal leukoencephalopathy (PML), which is caused by human polyomavirus type 2 (HPyV-2, JCPyV, JCV). The extent of the infection and the outcome of the disease depend crucially on the degree and duration of immunosuppression and the speed of immunological reconstitution.

It is well known and there is no doubt that antiviral T cell immunity is crucial for effective and sustained viral control. Here we will provide an overview on viral infections / reactivations immunosuppressed patients; we will discuss why comprehensive and detailed monitoring of viral load, frequency and functionality of antiviral T cells is essential for the development of a proactive and individualised treatment regimen for immunocompromised patients at risk of pathogen-related complications. Another focus is the use and mode of action of clinical grade antiviral T-cell products derived from memory T cells from healthy donors and the prospect of using genetically modified effector cells for the treatment of viral complications and virus-related malignancies.

**About us:**

Britta Eiz-Vesper studied biology at the Ernst Moritz Arndt University in Greifswald. Her scientific work focuses on infectiological and immunotherapeutic areas and in particular on the development and establishment of allogeneic cell-based therapies with natural and genetically modified effectors.

Britta Maecker-Kolhoff is a physician in pediatric stem cell transplantation at Hannover Medical School. Following a postdoctoral leave in tumor immunology and Harvard Medical School, Boston, she focused on virus-associated malignancies and complications in immunosuppressed patients. Together we founded the world's first allogeneic T cell donor registry alloCELL ([www.allocell.org](http://www.allocell.org)) in 2013 to identify suitable T cell donors, provide personalised antiviral T cell immunotherapies for patients in need and programmes for monitoring pathogen-specific T cells in immunocompromised patients with and without transplants. In the area of establishing the production of TCR/CAR/TRUCK T cells, which as so-called 'living drugs' are regarded as one of the most innovative and effective cell products in the field of virus-induced tumour diseases, the focus is on researching new target structures.