



Tobias Kaeser



Assistant Professor  
in Swine Immunology

PhD in Immunology, University  
of Veterinary Medicine Vienna,  
Austria

Diploma Biologist, Eberhard  
Karls University Tuebingen,  
Germany

**Address:**

College of Veterinary Medicine  
Department of Population  
Health and Pathobiology  
North Carolina State University  
1060 William Moore Drive  
Raleigh NC 27607, USA

**Phone:** 919-513-6352

**Email:** tekaeser@ncsu.edu

<https://cvm.ncsu.edu/directory/kaeser-tobias/>

### Swine in the One Health context – Improving the Health of Swine while using it as a Large Animal Model for Vaccine Development

#### Research emphasis:

My vision is to establish a lab providing state-of-the-art immune response (IR) analyses covering all three branches of the immune system: the innate, the humoral and the cellular immune response. The focus will be on antigen-specific immune responses and we will create a precise detection system for the most relevant pig and human pathogens including *C. suis* and *C. trachomatis* to complete the analysis of the host-pathogen interactions. We will use this technology to develop a vaccine against *C. suis* and *C. trachomatis*, to test *C. trachomatis* vaccine candidates with promising results in rodent models, and to analyse host-pathogen-interactions in diseases relevant for the swine industry in co-operation with other research groups.

#### Selected publications:

Käser T., Pasternak J.A., Hamonic G., Rieder M., Lai K., Gerdtts, V., Meurens F. (2016). Flow cytometry as an improved method for the titration of Chlamydiaceae and other intracellular bacteria. *Cytometry Part A* 89A, 451-460

Käser T., Cnudde T., Hamonic G., Rieder M., Pasternak J.A., Lai K., Tikoo S.K., Wilson H.L., Meurens F. (2015). Porcine retinal cell line VIDO R1 and Chlamydia suis to modelize ocular chlamydiosis. *Vet. Immunol. Immunopathol.* 166, 95-107

Käser T., Mair K.H., Hammer S.E., Gerner W., Saalmüller A. (2015). Natural and inducible Tregs in swine: Helios expression and functional properties. *Dev. Comp. Immunol.* 49, 323–331

Rodríguez-Gómez I.M., Käser T., Gómez-Laguna J., Lamp B., Sinn L., Rümenapf T., Carrasco L., Saalmüller A., Gerner W. (2015). PRRSV-infected monocyte-derived dendritic cells express high levels of SLA-DR and CD80/86 but do not stimulate PRRSV-naïve regulatory T cells to proliferate. *Veterinary Research* 46, 54-66

#### Applications:

- Pathogen detection systems via qPCR, flow cytometry (FCM) and confocal microscopy
- Cellular IR analysis via polychromatic FCM (pFCM)
- Detection of neutralizing antibodies using FCM
- Analysis of the innate IR via qPCR and pFCM

#### Collaboration potential:

- Large animal models for IR analysis and vaccine development
- IR analysis and pathogen detection via pFCM and confocal microscopy