



RAB-Symposium

Regulatory Autoantibodies Targeting GPCRs

September 15-16, 2022

Lübeck, Germany

www.rab-symposium.org



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Dear Sir or Madam, dear Colleagues,

It gives me great pleasure to announce the fourth hybrid symposium on regulatory auto-antibodies targeting G-protein-coupled receptors (GPCRs) in Lübeck.

GPCRs are involved in a variety of physiological and pathophysiological processes. So far, numerous therapeutics targeting GPCRs have been developed, with a focus on small molecules and monoclonal antibodies for the treatment of cancer, infections, metabolic disorders or inflammatory diseases. Recently, functional autoantibodies targeting GPCRs have been associated with various disease-specific manifestations, highlighting a potential new area for therapeutic intervention. Therefore, the aim of this symposium is to bring together the current knowledge on the role of autoantibodies targeting GPCRs in various diseases, such as cardiovascular diseases, renal diseases, autoimmune diseases such as systemic sclerosis or systemic lupus erythematosus. In addition, one aim is to bring together the mode of action of autoantibodies in immune regulation and pathogenesis.

I hereby cordially invite you to participate in this stimulating symposium with outstanding speakers from the field of GPCR research and fruitful discussions as well as poster sessions. We have waived the registration fees for digital participation to enable scientists from middle and low-income countries to participate in the RAB Symposium. The presence part of the congress welcomes you in the Media Docks Lübeck. A fantastic location on the waterfront, state-of-the-art media equipment combined with the charm of old harbour and industrial culture, only a few minutes' walk to the city centre - this means: short distances for networking in an appealing ambience. I look forward to welcoming you to the beautiful Hanseatic city of Lübeck and encourage you and your colleagues to contribute to this exciting meeting.

Welcome to the in-person symposium with the option to participate online.

Prof. Dr. Gabriela Riemekasten



Prof. Dr. Gabriela Riemekasten
*Universitätsklinikum Schleswig-Holstein
Universität zu Lübeck*



Prof. Dr. Yehuda Shoenfeld
*Tel Ha Shomer Hospital
Tel Aviv University, Israel*



Prof. Dr. Carmen Scheibenbogen
Charité – Universitätsmedizin Berlin

09:00 - 09:10 **Opening**

Gabriela Riemekasten, Yehuda Shoenfeld, Carmen Scheibenbogen

09:10 - 10:00 **Provocative statements**

Chairs: Carmen Scheibenbogen, Harald Heidecke

All diseases are autoimmune diseases

*Yehuda Shoenfeld | Tel Aviv University Zabudowicz Center for Autoimmune Diseases,
Tel Aviv, Israel*

All diseases are GPCR abs mediated diseases

Gabriela Riemekasten | UKSH, Campus Lübeck, Lübeck, Germany

10:00 - 10:30 **Coffee Break**

10:30 - 12:15 **COVID-19 and natural regulatory abs**

Chairs: Gabriela Riemekasten, Hanna Graßhoff

Anti-GPCR abs in acute COVID-19 infection

Otávio Cabral Marques | University of São Paulo, São Paulo, Brazil

COVID-Vaccination and anti-GPCR abs

Tanja Lange | UKSH, Campus Lübeck, Lübeck, Germany

Role of GPCR abs in Post-COVID syndrome

Carmen Scheibenbogen | Charité Universitätsmedizin, Berlin, Germany

PAR-1 abs in acute COVID-19 infection

Reza Akbarzadeh | Universität Lübeck, Rheumatologie

12:15 - 13:00 **Lunch Break**

13:00 - 14:15 **Poster Talks, followed by discussion in the poster exhibition**

Chairs: Alexander Hackel, Xinhua-Yu

Autoantibodies from Systemic Sclerosis patients targeting the angiotensin II type 1 and endothelin-1 type A receptor induce endothelial cell activation and pro-fibrotic responses

*Wieke van Oostveen, Bryan Koolmoes, Nivine Levarht, Rudmer Postma, Vincent van Duinen,
Anton Jan van Zonneveld, Gabriela Riemekasten, Rene Toes, Jeska de Vries-Bouwstra,
Cynthia Fehres*

Functional autoantibodies against the angiotensin II type I receptor (AT1R) in systemic sclerosis (SSc): influence of autologous stem cell transplantation (aSCT) and correlation with clinical outcome

Beate Preuß, Lukas Bankamp, Ann-Christin Pecher, Joerg Henes, Reinhild Klein

Different parts of ETAR N-terminus are involved in the receptor activation depending of the ligand

Michael Adu Gyamfi, Rusan Catar, Christian Lücht, Gunnar Kleinau, Michal Szczepek, Klemens Budde, Patrick Scheerer, Aurélie Philippe

GPCRs at the blood-brain barrier – focus on the role of G α /11 signaling

Jan Wenzel, Dorothea Ziemens, Dimitrios Spyropoulos, Markus Schwaninger

Personalized immune analyses: epitope mapping of the immunome

Michael Szardenings, Nicolas Delaroque, Markus Fischer, Karolin Kern, Marcus Puder, Lisbeth Ramirez Caballero, Dorothee Wehrmann, Eva Ehrentreich-Förster

14:15 - 15:45 Progress in preclinical models to measure RAB ab effects

Chairs: Lars Klareskoog, Thomas P. Sakmar

Animal models

Xinhua Yu | Research Center Borstel, Borstel, Germany

Modification of animal models and GPCR/monoclonal abs

Frank Petersen | Research Center Borstel, Borstel, Germany

Stroke and anti-GPCR abs

Matthias Endres | Charité Universitätsmedizin, Berlin, Germany

15:45 - 16:15 Coffee Break

16:15 - 17:20 Anti-GPCR binding biology

Chairs: Frank Petersen, Rusan Catar

Multiplexed validation of anti-GPCR antibodies

Thomas P. Sakmar | Rockefeller University, New York, United States

Glycocalix as novel player for anti-GPCR abs and for the modulation of receptor stimulation?

Mai Jäpel | UKSH, Campus Lübeck, Lübeck, Germany

Antibody-induced proteom

Paulina Mackedanz | UKSH, Campus Lübeck, Lübeck, Germany

17:20 - 17:25 Closing Day 1

Gabriela Riemekasten

17:25 - 18:30 Get-together in exhibition

06:30 - 07:30 **The natural and green zone of Lübeck- a jogging experience in the morning**
Gabriela Riemekasten

09:00 - 10:25 **Natural RAB-induced signalling**
Chairs: Jürgen Bernhagen, Carmen Scheibenbogen

Antibody cluster in vasculitis patients
Carlotta Meyer

Signalling of GPCR abs in different cellular models
Rusan A. Catar | Charité Universitätsmedizin, Berlin, Germany

Anti-GPCR-Ak als Biomarker für PsA und Colitis ulcerosa
Hanna Graßhoff | UKSH, Campus Lübeck, Lübeck, Germany

10:25 - 10:55 **Coffee Break**

10:55 - 11:55 **Therapy**
Chairs: Camilla Svensson, Tanja Lange

Aptamer BQ007, a novel therapeutic agent?
Bettina Hohberger | Universitätsklinikum Erlangen, Erlangen, Germany

Interfering with atherogenic GPCR functions by peptides
Jürgen Bernhagen | Institute for Stroke and Dementia Research (ISD) University Hospital Munich, München, Germany

11:55 - 13:00 **Lunch in the industrial exhibition**

13:00 - 14:35 **Fibromyalgia and ME/CSF as another challenge**
Chairs: Otavio Cabral-Marques, Scheibenbogen

Fibromyalgia: ab-mediated pathogenesis
Camilla I. Svensson | Karolinska Institutet, Stockholm, Sweden

Role of GPCR abs in chronic fatigue syndrome
Franziska Sotzny | Charité Universitätsmedizin, Berlin, Germany

Functional (catalytic) antibodies unravel autoimmune frequency in psychiatric disorders
Kamalanathan AS Sivasankaran | Centre for BioSeparation Technology, Vellore Institute of Technology (VIT), Vellore, Tamil Nadu, India

GPCR abs and confounding factors: Learning from fibromyalgia
Tanja Lange | UKSH, Campus Lübeck, Lübeck, Germany

14:35 - 15:05 **Coffee Break**

15:05 - 16:30 New pathogenesis insights from SSC

Chairs: Reza Akbarzadeh, Yehuda Shoenfeld

GPCR abs in systemic sclerosis

Susanne Schinke | UKSH, Campus Lübeck, Lübeck, Germany

CXCR3 abs and cardiovascular diseases

Felix Müller | Universitätsmedizin Mainz, Mainz, Germany

Metabolom and anti-GPCR abs

Sebastian Jendrek | UKSH, Campus Lübeck, Lübeck, Germany

GPCR abs and EVs in SSC - the bad boys affecting immune cell functions

Alexander M. Hackel | UKSH, Campus Lübeck, Lübeck, Germany

16:30 - 16:40 Break

16:40 - 17:10 Lecture

Chair: Gabriela Riemekasten

EVs and antibody-interactions

David S. Pisetsky | Duke University School of Medicine, Durham, United States

17:10 - 17:30 Closing

Gabriela Riemekasten, Yehuda Shoenfeld, Carmen Scheibenbogen

What are the next steps, how to proceed? - General discussion

Closing remarks

Gabriela Riemekasten | UKSH, Campus Lübeck, Lübeck, Germany



Venue

The event will take place at the Media Docks in Lübeck.

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