Registration
Until February 14th 2022 via the following link:
https://forms.gle/fkkRPXTtpobXK44T9
Participation is free of charge, but registration is required. The workshop will be online and the number of participants is limited to 250 persons.

Organization
Eva M. Huber is a researcher and lecturer (Akademische Rätin auf Zeit) at the chair of biochemistry of the Technical University of Munich and a member of the Young Scholars' Program of the Bavarian Academy of Sciences and Humanities since 2017.

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BAdW

From basic research to clinical application: Proteasome inhibitors as drugs for blood cancer and autoimmune diseases

ONLINE WORKSHOP

21/2/22

9.00 A.M. – 5.00 P.M.

Junges Kolleg | BAYERISCHE AKADEMIE DER WISSENSCHAFTEN

Program

8.55 **Reception**
EVA M. HUBER
(Technical University of Munich/BAdW)

SESSION 1: NATURAL AND SYNTHETIC PROTEASOME INHIBITORS

9.00 **Historic review of proteasome structure research**
MICHAEL GROLL (Technical University of Munich)

9.30 **Proteasome inhibitor classes – an overview**
PHILIPP BECK (Freeline Therapeutics GmbH)

10.00 **Biotechnological production of proteasome inhibitors**
HELGE B. BODE
(Max Planck Institute for Terrestrial Microbiology)

10.30 **Coffee break**

SESSION 2: PROTEASOME INHIBITORS FOR BLOOD CANCER THERAPY

11.00 **Multiple Myeloma:**
Pathogenesis and therapeutic options
AXEL NOGAI (Charité-Universitätsmedizin Berlin)

11.30 **Proteasome inhibitors – a clinical perspective**
MARTIN KORTÜM (University Hospital Würzburg)

12.00 **Lunch break**

SESSION 3: THE IMMUNOPROTEASOME – A NEW DRUG TARGET

13.30 **Structure and function of the immunoproteasome**
EVA M. HUBER
(Technical University of Munich/BAdW)

14.00 **Autoimmune diseases, inflammation, transplantation – new fields of proteasome inhibitor application?**
MICHAEL BASLER (Biotechnology Institute Thurgau (BITg)/University of Konstanz)

Proteasome inhibitors as drugs for blood cancer and autoimmune diseases

The proteasome is the major intracellular protease. It cleaves polypeptides in fragments to recycle their building blocks for de novo protein biosynthesis. This function is essential for controlling protein levels, removing damaged entities and ultimately ensuring cell survival. In addition, mammalian proteasome cleavage products are used for immune surveillance and protection against invaders like viruses. Since the 1990s inhibition of the proteasome by small-molecules is being explored. These activities led to the approval of three drugs that emerged to block busters and revolutionized the treatment of multiple myeloma patients. In recent years, selective inhibition of the immunoproteasome, a special proteasome version in immune cells, was shown to be therapeutically effective in autoimmune diseases and chronic inflammations. Drug development efforts cumulated in phase II clinical trials, raising hopes for expanding the clinical application of proteasome inhibitors in the future. This workshop will cover basic research on proteasome inhibitor development and discuss clinical applications as well as future perspectives. The course addresses chemistry and biochemistry (PhD) students or postdocs a well as medical doctors.

14.30 **Structure-based design of immunoproteasome inhibitors**
ELMER MAURITS (Leiden Institute of Chemistry)

15.00 **Industrial drug discovery**
STEPHAN KRAPP (Proteros biostructures GmbH)

15.30 **Coffee break**

KEYNOTE LECTURE

16.00 **Structural biology and its key role in the life sciences and in medicine**
ROBERT HUBER
(Max Planck Institute of Biochemistry/BAdW)