NCT Seminar Series

Speaker: Prof. Dr. Christa E. Müller
PharmaCenter Bonn, Pharmaceutical Institute, Pharmaceutical Chemistry I, University of Bonn, Bonn, Germany

Title: Development of Drugs Targeting Purine-Binding Membrane Proteins for Cancer (Immuno) Therapy

Date: 4th August 2017

Time: 13:30 h

Location: NCT – National Center for Tumor Diseases
Conference Room K2/K3, 2nd floor
Im Neuenheimer Feld 460, 69120 Heidelberg

Host: Prof. Dr. Christof von Kalle

Prof. Dr. Christa Müller is a full professor of pharmaceutical chemistry and a research scientist at the University of Bonn. Her research interests are medicinal chemistry and molecular pharmacology of purine binding membrane proteins (adenosine receptors, P2 purine receptors, adenine receptors and ecto-nucleotidases; lipid-activated and orphan G protein-coupled receptors). Since 2016 she is also elected president of the German Purine Club as well as a member of the Editorial Board of Scientific Reports from the Nature Publishing Group.

Adenosine is an important ubiquitous (patho)physiological modulator. It activates G protein-coupled purine P1 receptors (adenosine receptors, subtypes A1, A2A, A2B, A3) and thereby exerts sedative, anti-convulsive, antidiuretic, negative inotropic & chronotropic, immunosuppressive, anti-inflammatory and angiogenic effects. In fact, adenosine is one of the most powerful immunosuppressive mediators of the innate immune system. Many cancer cells overexpress ectonucleotidases which convert adenine nucleotides to adenosine producing “a protection shield” of adenosine against attack by immune cells. Therefore, blockade of ectonucleotidases and adenosine receptors has been proposed as a novel strategy in cancer therapy.

Our group has been developing tool compounds and drugs targeting the various subtypes of purine receptors and ectonucleotidases. We are focusing on medicinal chemistry and in vitro pharmacology of purinergic signalling including the development of novel assays, and structure-based approaches.
Selected Publications:

