



Proteases of RNA viruses: Structures, inhibitors and resistance

Viral proteases are important targets for structure-based drug discovery. Prime examples are the proteinases of coronaviruses and the retroviral proteases. The progress that has been made in inhibitor design for the coronavirus main proteinase since the global outbreak of Severe Acute Respiratory Syndrome (SARS) in 2003 will be described.

The development of viral resistance against drugs seems to be inevitable. The structural evolution of resistance mutants of the HIV-1 proteinase in a patient treated with ritonavir will be discussed and efforts to overcome such resistance will be presented.

About the speaker: Rolf Hilgenfeld studied chemistry at the universities of Göttingen and Freiburg, Germany. He did his PhD in protein crystallography at the Free University of Berlin and after a postdoctoral stay at the Biocenter of the University of Basel, Switzerland, he joined Hoechst AG, the pharmaceutical company in Frankfurt, to build a macromolecular crystallography laboratory. Rolf Hilgenfeld was also among the first scientists to determine the structure of the HIV-1 protease and to design inhibitors against this target. He also elucidated the structure of elongation factor Tu and studied its interaction with antibiotics. In 1995, he moved to the University of Jena to take over the Chair of Structural Biochemistry, in combination with the position of Head of the Crystallography Department at the newly founded Institute of Molecular Biotechnology. Since 2003, Rolf Hilgenfeld has been Full Professor of Biochemistry at the University of Lübeck, Germany. Today his research focusses on the molecular basis of infectious diseases by bacteria such as *Legionella pneumophila* and *Chlamydia* and by RNA viruses. During the global SARS epidemic of 2003, he published the crystal structure of the coronavirus main proteinase and proposed a first inhibitor against the disease.

Rolf Hilgenfeld

Institute of Biochemistry, Center for Structural and Cell Biology in Medicine (CSCM), University of Lübeck, Ratzeburger Allee 160, 23538 Lübeck, Germany

Date: 20 Sep 2006, Wed
Time: 4 pm
Venue: DBS Conference Room
Host: Dr Song Jianxing

Department of Biological Sciences
Structural Biology and Proteomics Research Group
Seminar Announcement

