University of Birmingham

Dr Klaus Fütterer PhD

Reader in Structural Biology
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School of Biosciences (/schools/biosciences/index.aspx)

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About

Dr Klaus Fütterer is a structural biologist whose research focuses on cell wall synthesis in the pathogen *Mycobacterium tuberculosis*.

Qualifications

Dipl. Phys. (University of Karlsruhe)

Dr. rer. nat. (Technical University Berlin)

Biography

Klaus Fütterer received his education in Germany, reading Physics at the University of Karlsruhe and earning a doctorate in Crystallography at TU Berlin. Following postdoctoral research at Australian National University, Canberra, Australia and at Washington University in St. Louis, USA, he joined the School of Biosciences in 2000.

Teaching

Dr. Fütterer's teaching is centred on first and final year modules of the BSc Biochemistry course. He delivers lectures and practicals in a wide range of areas, including structural biology, physical biochemistry and mechanisms of bacterial pathogenicity. He favours an enquiry-based approach with a strong emphasis on interactive elements.

Research

Explaining the molecular basis of biological phenomena requires detailed knowledge of the three-dimensional structure of proteins and their interaction partners. Dr. Fütterer's group applies X-ray crystallography to elucidate structures of the catalytic machinery that assembles the cell envelope of Mycobacterium tuberculosis, the pathogen causing tuberculosis. Polymers of arabinose and galactose sugars are a major component of the waxy coat of the tubercle bacillus. Glycosyltransferase enzymes that play a central role in synthesising these polysaccharides not only offer opportunities for therapeutic intervention, but also represent a wealth of unique and underexplored molecular biology. Part of this effort forms the structural characterisation of potential anti-TB drug targets in complex with candidate drug compounds.

Other activities

Dr. Fütterer is Admissions Tutor for the undergraduate courses in Biosciences and is serving as one of two Deputy Heads of the School of Biosciences.

Publications

(* corresponding author)

Roy R, Usha V, Kermani A, Scott DJ, Hyde EI, Besra GS*, Alderwick LJ*, **Fütterer K**.* (2013) Synthesis of α-Glucan in Mycobacteria Involves a Hetero-octameric Complex of Trehalose Synthase TreS and Maltokinase Pep2. *ACS Chem Biol.* 2013 Aug 13. DOI: 10.1021/cb400508k [Epub ahead of print]

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S.M. Batt, T. Jabeen, A.K. Mishra, N. Veerapen, K.Krumbach, L. Eggeling, G.S. Besra*, **K. Fütterer*** (2010) Acceptor substratediscrimination in phosphatidyl-myo-inositol mannoside synthesis: structural andmutational analysis of mannosyltransferase Corynebacterium glutamicum PimB'. *J Biol Chem* **285**, 37741-37752

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