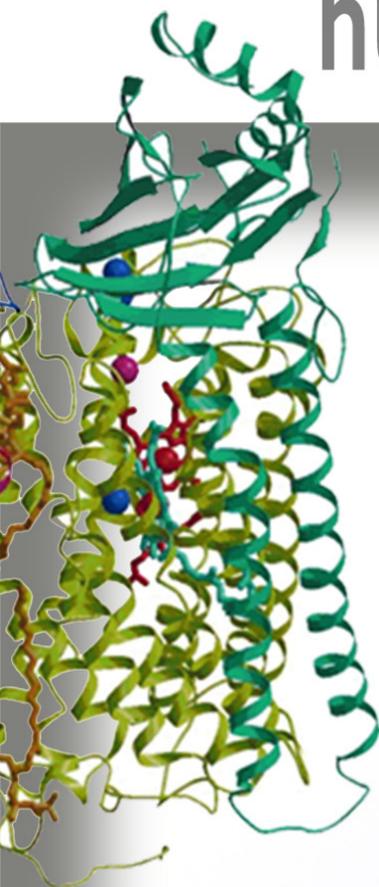


Towards structure determination of human membrane proteins



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Abstract

The results of various genome projects have shown that up to 30% of human proteins occur in cell membranes. Membrane proteins play crucial roles in many biological functions and are of key importance for medicine. Over 50% of commercially available drugs target membrane proteins. In spite of the abundance and importance of membrane proteins there are only 100 unique membrane protein structures in the Protein Data Bank. To address the technical bottlenecks preventing the structure determination of membrane proteins, we have recently started "ERATO human receptor crystallography project" supported by the Japanese Science and Technology Agency. We have also obtained a support from the Wellcome trust to establish an outstation of Imperial College London at the new UK synchrotron Diamond. I will discuss our strategy how to establish the structure determination method of human membrane proteins using these new facilities and its impact on biological sciences, pharmacology and medicine. I will also present our some recent results on membrane protein crystallography.

About the speaker

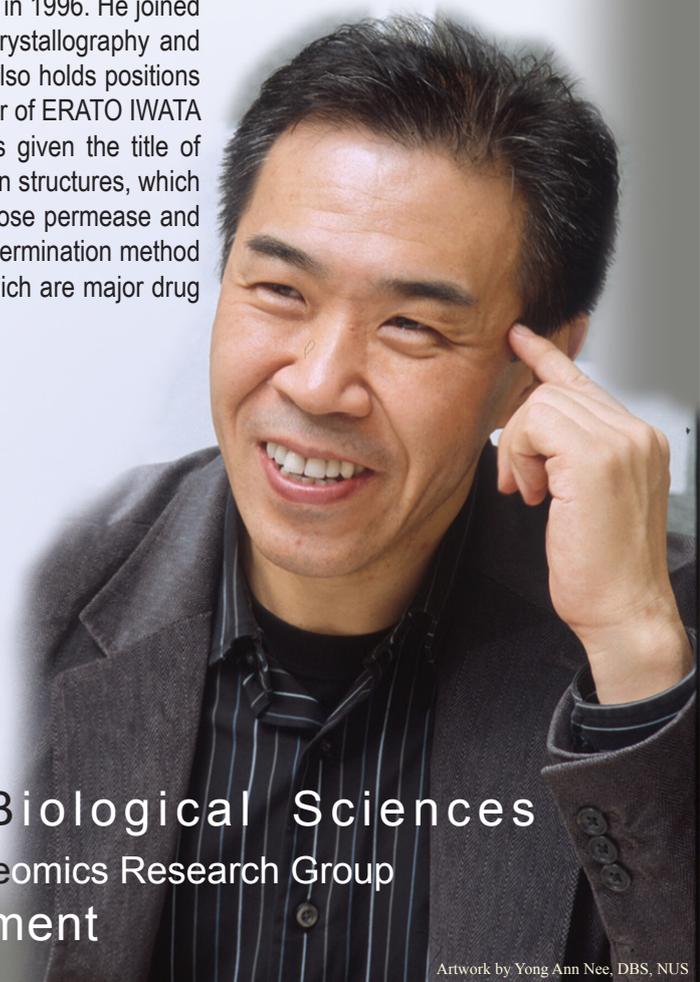
Prof. Iwata was awarded a PhD at University of Tokyo in 1991. After postdoctoral research experience at Photon Factory, Japan (1991-2) and at the Max-Planck-Institute for Biophysics, Germany (1992-6), he became a lecturer at Uppsala University, Sweden in 1996. He joined Imperial College London in 2000 as the Chair of Membrane Protein Crystallography and became Director of Centre for Structural Biology in January 2005. He also holds positions as a Diamond Fellow at Diamond Light Source and the Research Director of ERATO IWATA Human Receptor Crystallography project. In December 2005, he was given the title of David Blow Chair of Biophysics. He has solved various membrane protein structures, which are essential for the cell functions, including cytochrome c oxidase, lactose permease and photosystem II. His current main interest is to establish the structural determination method of human membrane proteins including G-protein coupled receptors, which are major drug targets.

Date: 24 Nov 2006, Friday

Time: 4 pm

Venue: LT 20

Host: Dr J Sivaraman



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