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Michael Reth to receive Schering-Plough research prize

The spokesperson of the "bioss" excellence cluster has been awarded the EFIS-Schering-Plough European Immunology Prize for his research into immune cell signalling processes. The European Federation of Immunological Societies' EFIS-Schering-Plough European Immunology Prize, which recognises individuals who have made an outstanding discovery in the field of immune research, has now been awarded for the second time.



Prof. Dr. Michael Reth, professor of molecular immunology (© private)

The prize, which consists of a cash award of 50,000 euros is awarded every three years. The winner will officially receive the award at the opening ceremony of the Second European Congress of Immunology (ECI), to be held in Berlin on September 13th 2009. EFIS brings together 27 national societies and has around 13,000 members.

This year's prize goes to Prof. Dr. Michael Reth to honour his outstanding achievements in the clarification of the activation processes of immune cells. The human body consists of a broad range of different cell and tissue types, including our immune system. Infections caused by microorganisms raise the alarm in the cells of our immune system, which are then activated and develop into effector cells that fight off infectious intruders. An example of this is the B-cells (one of five types of leukocytes/white blood cells) that produce antibodies to capture and dissolve microorganisms.

But how are the B-cells activated? It has been known for quite some time that antibodies can either be attached to the membranes of B-cells or be secreted. The membrane-bound form of an antibody is part of the B-cell receptor, which allows B-cells to detect specific antigens. However, little was known about how the binding of a foreign substance led to an intracellular signal and triggers the activation of B-cells. Prof. Reth's team of researchers discovered two new proteins that are signalling subunits of the B-cell receptor. Detailed investigations led to the identification of a sequence motif, which was subsequently called the "immunoreceptor tyrosine activation motif" (ITAM). Further research showed that these sequences localise and activate intracellular enzymes such as kinases, thereby transmitting the signal into the cell and cell nucleus.

It is interesting to note that many immune cell receptors have ITAMs; the motif can therefore be regarded as a universal signalling principle of immune cells. ITAM signals not only play an important role in the recognition of and defence against pathogens and the activation of the immune system. They are also involved in a number of autogenic diseases. Wrongly regulated ITAM signals are to a large extent involved in the development of blood cancers such as leukaemias or lymphomas. The "bioss" excellence cluster is currently investigating the processing and regulation of ITAM signals in greater detail.

About Prof. Dr. Michael Reth

Michael Reth was born in Düsseldorf, Germany in 1950. He studied biology at the University of Cologne and did his doctorate at the Institute of Genetics in Cologne. He continued his postdoctoral training at the Columbia University in New York, USA. In 1988, the Nobel Laureate Georges Köhler brought him to the Max Planck Institute of Immunobiology in Freiburg. Since 1995, Reth has been professor of molecular immunology at the Institute of Biology III at the Faculty of Biology of the University of Freiburg, as well as continuing his research at the Freiburg-based MPI of Immunobiology. He is the spokesperson of the "bioss" (Centre for Biological Signalling Studies) excellence cluster and has received numerous awards, including the DFG's Heinz Maier Leibnitz Award and the DFG's Gottfried Wilhelm Leibniz Prize

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On the recommendation of:



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Further information

[bioss](#)⁽¹¹⁾

[MPI Immunobiology](#)⁽¹²⁾

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