

PRESS RELEASE, 2 SEPTEMBER, 2010

ERNST SCHERING PRIZE GOES TO A RESEARCH DUO FROM LONDON

The Ernst Schering Foundation, Berlin, honors Professor Sir Marc Feldmann and Professor em. Sir Ravinder N. Maini for their fight against rheumatoid arthritis and other autoimmune diseases



Ravinder N. Maini (l) und Marc Feldmann (r)
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On September 28, 2010, the Ernst Schering Foundation in Berlin will award this year's Ernst Schering Prize for international excellence in the field of medicine and basic biological and chemical research. For the first time, the award goes to two scientists. The prize winners are Professor Sir Marc Feldmann and Emeritus Professor Sir Ravinder N. Maini from the Kennedy Institute of Rheumatology at Imperial College London.

A key feature of their work has been the close and fruitful long-term collaboration and the overlap in skills and interests. This has probably helped them to be leaders in the difficult process of translating laboratory research into real medical progress for patients.

About the research work of Marc Feldmann and Ravinder N. Maini

Ravinder N. Maini and Marc Feldmann have worked together since the early 1980s to unravel the molecular basis of a major autoimmune disease, rheumatoid arthritis. They discovered a new approach to therapy that has benefitted millions of patients worldwide.

The important research which Feldmann and Maini and their group has performed led to the development of a family of new drugs blocking a host defence molecule, tumor necrosis factor, abbreviated TNF, which controls inflammation and tissue destruction not only in rheumatoid arthritis but also in psoriatic arthritis, ankylosing spondylitis, psoriasis, Crohn's disease, and ulcerative colitis.

The TNF blocking drugs, either monoclonal antibodies or TNF receptor fusion protein, are effective in the majority of patients, even those refractory to all previous treatments, and are now used by patients with the more severe forms of these diseases. Of particular importance is that joint destruction is halted and the quality of life much improved, so that these drugs are highly appreciated by patients.

The major breakthrough came from research into understanding the key molecules that were driving the disease process in rheumatoid arthritis. While many groups focussed on cells of the immune and inflammatory system, Maini and Feldmann focussed on a family of protein molecules involved in cell to cell communication, the cytokines. Cytokines are involved in many key biological processes, including immunity and inflammation. Feldmann and Maini developed novel techniques of analysing the actual human disease tissue and eliciting which cytokines were produced locally. They found that abnormal levels of cytokines were produced and this suggested that increased proinflammatory cytokines may be driving the disease process. But which cytokine? By evaluating cultures of human rheumatoid joint tissue, Fionula M. Brennan, working with Feldmann and Maini's group in 1989, demonstrated that one cytokine, termed TNF α , was able to augment the levels of other proinflammatory cytokines.

Blocking TNF α in animal models of arthritis was effective, and enforced the scientific rationale for testing the novel idea that blocking just one of many proinflammatory cytokines would be sufficient to

ameliorate disease. In 1992 Maini and Feldmann were principal investigators in the first clinical trial to test TNF blockade in active rheumatoid arthritis patients, which had failed all other treatment. This was performed at Charing Cross Hospital, subsequently part of Imperial College Healthcare NHS Trust. The results were remarkable, all the patients improved markedly.

Maini and Feldmann were also leaders in all the trials that led to the registration of this first TNF blocker, thus not only initiating the hypothesis but establishing it in the laboratory and verifying it in the clinic, all the way to approval by the regulatory authorities in Europe and the United States. It is truly unusual for scientists to be so deeply involved in the whole therapeutic path, and to see it through to completion.

The work of the two London professors laid the foundation for five now approved anti-TNF drugs – etanercept (1998), infliximab (1999), adalimumab (2002) and more recently certolizumab and golimumab (2009). Their work has also led to the understanding of the importance of a new branch of medical treatment, anti-cytokine therapy. This explores the blockade of other cytokine messengers, for example IL-6 and IL-17. The medical and subsequently commercial success of TNF blockade has led to a change of strategy in pharmaceutical companies, which despite ignoring them previously now recognize monoclonal antibodies and related proteins as a major source of therapeutics.

About Marc Feldmann

Professor Sir Marc Feldmann was born in Lvov, Poland, near the Russian border, to a Jewish family who moved to France immediately after the war and then to Australia, where he was educated in medicine at the University of Melbourne, prior to getting his PhD in Immunology at the famous Walter and Eliza Hall Institute of Medical Research, under the supervision of Sir Gus J.V. Nossal. As a post-doc he moved to London to work with Avrion Mitchison at the ICRF Tumour Immunology Unit and became Professor of Immunology at the University of London in 1986 after moving to the Kennedy Institute of Rheumatology. His research career focussed initially on cell interactions and their mediators, and the role of these mediators, cytokines, in autoimmune disease. Professor Feldmann succeeded Professor Maini as director of the KIR in 2002, and in recent years has been busily exploring with colleagues the role of cytokines in other important life threatening diseases of the heart and brain. The discovery of anti-TNF therapy has led to scientific recognition with election to the Royal Society (UK) and the Australian Academy of Sciences, and the European Inventor of the Year award (2007). Together, Profs. Maini and Feldmann have previously won a series of international prizes, including the Crafoord Prize of the Royal Swedish Academy (2000), the Lasker Clinical Medical Research Award (2003), and the Dr. Paul Janssen Award (2008).

About Ravinder N. Maini

Emeritus Professor Sir Ravinder N. Maini was born in 1937 in Ludhiana in the Punjab region of India but has lived most of his life in the UK. After his natural sciences bachelor's degree at Sidney Sussex College, Cambridge, and medical training in London, he worked for four decades as a clinical scientist-physician at the Kennedy Institute of Rheumatology and in London hospitals (1962-2002). In the late 1960s, in Dudley Dumonde's laboratory, he was an early researcher in defining messenger molecules released by human lymphocytes which mediated immunological reactions. Thereafter he combined immunological laboratory research with clinical practice throughout his career. In 1979 he was appointed as Professor of Immunology of Rheumatic Diseases at the Charing Cross and Westminster Medical School and simultaneously as Head of the Laboratory Division of Clinical Immunology at the Kennedy Institute of Rheumatology. In 1990 he became Scientific Director at the Kennedy Institute of Rheumatology; from August 2000 until September 2002 he headed the Institute upon its merger with Imperial College, London. From November 2002 until his retirement from clinical practice in 2007, he was Emeritus Honorary Consultant Physician at Charing Cross Hospital and Hammersmith Hospitals Trust, London. Since November 2002 he has been Emeritus Professor of Rheumatology at the Imperial College London. For his scientific contributions Maini has received prestigious prizes, many shared with Feldmann, was elected to the Royal Society (UK) and was knighted in 2003 by Her Majesty Queen Elizabeth II.

The Ernst Schering Foundation

Established in 2002 by Schering AG, Berlin, the independent non-profit Ernst Schering Foundation aims to promote science and art with a special focus on the natural sciences and contemporary art. In addition, the Foundation promotes the scientific and cultural education of children and youth and the dialogue between science and society. Particular emphasis lies on projects in frontier areas, especially at the interface of art and science. The Foundation has an endowment of €35 million.

The **Ernst Schering Prize** is one of the most prestigious German science prizes with a prize money of €50,000. It was established by the Ernst Schering Research Foundation in 1991 and is given annually. Since 2003, the prize has been administered by the Ernst Schering Foundation. It is awarded on an international level for particularly outstanding basic research in the fields of medicine, biology or chemistry.

IMPORTANT DATES

Press conference with the prize winners

September 28, 2010, at 11 am

Ernst Schering Foundation | Unter den Linden 32-34 | 10117 Berlin | Germany

Award ceremony "Ernst Schering Prize 2010"

September 28, 2010, at 6 pm in Berlin, by invitation only

Presentations of the prize winners

September 29, 2010, at 10 am

lecture to high school students in Berlin-Tegel

"Identification of a molecule that revolutionised treatment of disabling arthritis"
non-public event

September 29, 2010, at 4 pm

public lecture for scientists and students

"Discovering a molecular therapy for chronic inflammatory arthritis"

Charité Universitätsmedizin Berlin - Hörsaal Südflügel

Sauerbruchweg 2 | 10117 Berlin

The lecture will be in English. Registration is not necessary.

For photographs please see: www.scheringstiftung.de/en/press/press-photos.html

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