The 1998 Novartis Prize for Clinical Immunology was divided between Professor Barry Bloom from the Albert Einstein College of Medicine, New York for his contribution to understanding the role of lymphocytes in macrophage migration and in immunity to tuberculosis; Professor George MacKaness of the New York University Centre for his work in elucidating cellular immunity against intracellular bacteria; and Professor Andrew McMichael of Oxford University, UK for his work on the lymphocyte response to viral infections.

The 2001 Novartis Prize for Basic Immunology was shared between Professor Klas Kärre of Karolinska Institute, Stockholm, Sweden; Professor Lorenzo Moretta of the University of Genova, Italy, and Professor Wayne Yokoyama of the University of Washington, Saint Louis, Missouri, USA, for their contributions to our understanding of Natural Killer cells.

The 2001 Novartis Prize for Clinical Immunology was awarded to Professor Alain Fischer of the Hôpital Necker, Paris, France, for his research in genetic disorders affecting the human immune system.

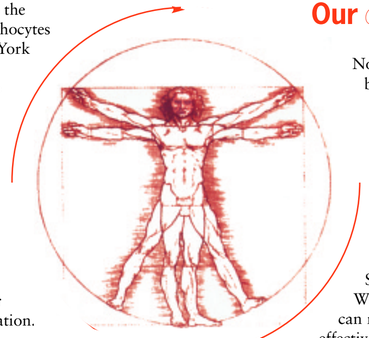
The 2004 Novartis Prize for Basic Immunology went to Professor Ralph M. Steinman of Rockefeller University, N.Y. who, in the 1970s, identified dendritic cells as playing a key part in antigen presentation.

The 2004 Novartis Prize for Clinical Immunology went to Professor Hugh O. McDevitt of Stanford University who, in the late 1960s, was first to identify the 'immune response' (IR) genes and map them to the Major Histocompatibility Complex (MHC), which caused a major paradigm shift in immunology.

As an exception in 2004 the jury awarded a Special Novartis Immunology Prize to Professor Leonard A. Herzenberg of Stanford University for his pioneering work on fluorescent activated cell sorting (FACS) and the introduction of fluorescent-labelled antibodies as reliable FACS reagents.

The 2007 Novartis Prize for Basic Immunology was awarded to Professor Fred Alt and Professor Klaus Rajewsky, Pediatrics-Children's Hospital, Boston, USA and Professor Fritz Melchers, Biozentrum, Basel, Switzerland, for their discovery of novel and fundamental mechanisms of B lymphocyte physiology at the genetic, developmental and cell-receptor levels.

The 2007 Novartis Prize for Clinical Immunology went to Professors John Schiller and Doug Lowy, National Institutes of Health, Bethesda, Maryland, USA and Professor Ian Frazer, University of Queensland, Australia, who exploited their discoveries of the protein-peptide biology of the human papilloma virus to build the foundation for what has become an approved vaccine for this virus with the potential to prevent cervical cancers caused by subtypes of this virus.



## Our commitment

Novartis' commitment to immunology and its leading role in this challenging but promising field of science is demonstrated by its continuous support of innovative research and development, which has led to an impressive number of achievements over the past three decades.

Notable amongst these was the introduction of Sandimmun®/Neoral® (ciclosporin). This proved a major breakthrough when it was first used in human organ transplantation in 1978. By reducing rejection episodes. Neoral® significantly increased patient and graft survival, making it possible to give transplants to patients previously considered at high risk.

Skin disorders affect a significant number of the world's population. While rarely life threatening, diseases such as psoriasis and atopic dermatitis can result in a compromised quality of life. Neoral® has proven to be an effective treatment option for this latter group of patients – prompting our continued research into T-cell mediated skin diseases and their treatments.

Novartis is committed to the development of gene, cell and organ-based therapies through the use of emerging technologies. Impressive resources have been allocated to the research and development of new drugs to combat cancer. Amongst the approaches are signal transduction inhibition of tumour cells; antisense techniques which selectively block the expression of genes; anti-idiotypic or bispecific antibodies; drugs to overcome multidrug resistance as well as growth factors. In future these projects will complement our existing portfolio of marketed products, which already give us a considerable franchise in this therapeutic area.

The Novartis Immunology Prizes will be awarded at a special ceremony during the XIVth International Congress of Immunology in Kobe, Japan on 23 August 2010. As in the past, prize winners will give their lectures at the award ceremony.

**Nominations must be received by 24 January 2010.**

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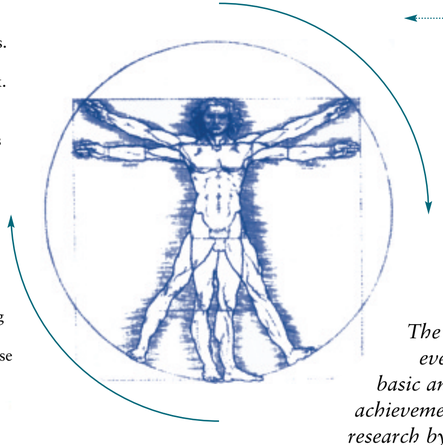


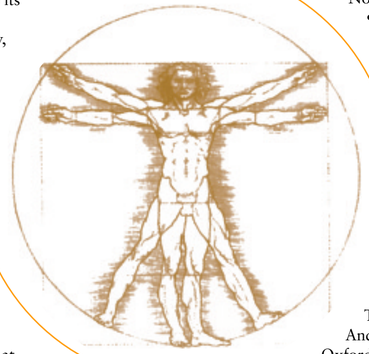
# Novartis Immunology Prizes 2010

*The Novartis Prizes for Immunology are awarded every third year for outstanding contributions to basic and clinical immunology, recognising individual achievement and providing financial support for further research by the recipients. The prizes are a major feature of the triennal International Congress of Immunology, the leading world event in immunology.*

NOVARTIS

## The *prizes*

In 1990 Novartis established the Novartis Prize for Immunology which was expanded to its present format in 1992. Novartis is committed to its support of basic research in immunology and to a continued high level of R&D. The Novartis Prizes for Immunology, one for basic and one for clinical immunology, are each worth SFr 100,000, and may be shared between more than one individual. A fifth of each prize is given in personal recognition of exceptional individual endeavour and achievement, while the remainder is intended to support further research by the prize winners. The prizes were set up both to stimulate research for some of the most difficult problems in modern medicine, and to increase fruitful exchanges between researchers in the academic and industrial communities. They provide a valuable focus on immunology as a key area for medical progress, and are intended to further remarkable recent advances in understanding which have made it possible to treat or even cure conditions that have long been seen as an inescapable part of the human condition.



## The *prizes are awarded for*

Outstanding achievements in the understanding of immunology and major immunological discoveries that lead to therapeutic applications in such fields as transplantation, haematopoiesis, cancer immunology, immunity to infectious diseases, rheumatology, dermatology and asthma. Innovative immunological research in these areas has amply demonstrated its immense potential, leading to significant advances.

## *Nominations*

Nominations should be made by independent scientists who are familiar with the work of the candidate(s).

## How *to enter*

Nominations must be written in English and must consist of:

- A summary of the research work (up to two pages in length);
- Curriculum vitae;
- Bibliography; experimental original papers in English or extended summaries in English

The summary gives the opportunity to describe the specific aspects of the work, including the aims and achievements to date of the work submitted. The deadline for entries, which should contain an electronic version of the summary, is 24 January 2010. They should be sent to:

Dr Erik Wiskott, Novartis Prizes for Immunology, P.O. Box 360,
CH 4013 Basel, Switzerland
Tel/Fax: +41 61 421 9019 E-mail: erik.wiskott@novartis.com

## The *judges*

The judges comprise a prestigious, international panel of seven members, chaired by Andrew McMichael, of the Weatherall Institute of Molecular Medicine, John Radcliffe Hospital, Oxford, UK.

The other members are:

Tadamitsu Kishimoto, of the Laboratory of Immune Regulation, Osaka University, Japan.

Bernard Malissen, of the Centre d'Immunology de Marseille-Luminy, Marseille, France.

Philippa Marrack, of the Howard Hughes Medical Institute Research Laboratories at the National Jewish Center for Immunology and Respiratory Medicine, Denver, Colorado, USA.

Hidde Ploegh, of the Department of Pathology, Harvard Medical School, Boston, MA, USA.

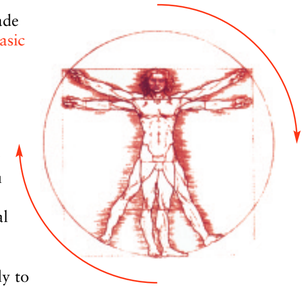
David H. Sachs, of the Harvard Medical School, Transplantation Biology Research Center, Massachusetts General Hospital, Boston, MA, USA.

Jan de Vries, Novartis Institutes for Biomedical Research, Vienna, Austria.

## Case *studies of previous winners*

The Novartis Prize for Immunology was first awarded in 1990 to Dr Max Cooper of the University of Alabama, Birmingham, US and Dr Jacques Miller, of the Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia for their work with T and B cells.

In 1992 the Novartis Prize was divided to allow awards to be made for both basic and clinical immunology. The Novartis Prize for Basic Immunology went to Professor Jack L Strominger, Professor of Biochemistry at Harvard University, US for contributions to the science of immunology over the previous 20 years including the elucidation of the mechanism of T-cell recognition.



The 1992 Novartis Prize for Clinical Immunology was shared by two scientists from Osaka University, Japan, Professor Tadamitsu Kishimoto and Toshio Hirano, who were the first to characterise the molecular structure of interleukin and to describe pathological processes associated with it.

In 1995 Novartis Prize for Basic Immunology was awarded jointly to Professor Melvin Cohn of the Salk Institute for Biological Studies,San Diego, USA; Professor Kevin Lafferty of the John Curtin School of Medical Research, Canberra, Australia; Professor Avrion Mitchison of the Deutsches Rheumaforschungszentrum, Berlin, Germany; and Professor David Talmage of the University of Colorado School of Medicine. Their work focused on the hypothesis that the infectious process might play a special role in the induction of T-cell responses versus T-cell tolerance.

In 1995 Novartis Prize for Clinical Immunology was divided between Professor Robert S. Schwartz, editor of the New England Journal of Medicine, Boston, USA, one of the key movers in clinically orientated microbiology and Professor Thierry Boon, of the Ludwig Institute of Cancer Research, Brussels, Belgium, for the seminal studies defining targets for anti-tumour immunology and his efforts to apply them clinically.

The 1998 Novartis Prize for Basic Immunology was shared between Professor Mark Davis, Stanford University School of Medicine, USA and Professor Tak Mak, University of Toronto, Canada for their contribution to understanding the structure of the T-cell receptor.