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# Otto Naegeli Prize 2016

Markus Heim, Lars French, Hans Hengartner

The “Otto Naegeli Prize for Medical Research” enjoys significant international attention. In this issue of the *Swiss Medical Forum*, the two 2016 award recipients present their research work in concise reviews. The publication of these articles in the SMF provides a wide audience of medical professionals in Switzerland and abroad with first-hand information about two exemplary and outstanding medical research programmes led by two clinician scientists working in Switzerland.

The 2016 Otto Naegeli Prize is awarded equally to two clinician scientists, Adrian Ochsenbein and Markus Manz. The justifications of the scientific advisory committee are presented in the two official laudations by former prize awardees Hans Hengartner (for Adrian Ochsenbein) and Lars French (for Markus Manz).

## **Better understanding of the mechanisms of immune response to cancer cells**

The Otto Naegeli Prize 2016 is awarded to *Professor Adrian Ochsenbein* in recognition of his outstanding scientific achievements as a clinically active medical oncologist and his extremely successful scientific career in the field of basic and translational cancer research. His research has focused on the elucidation of the mechanisms of immune response to cancer cells and

how cancer cells manage to escape the control of the immunological defense system. To study these basic mechanisms, he and his research team worked mainly with tumour models in mice. In parallel, in clinical trials with patients suffering from cancer, he evaluated how the scientific findings made in the laboratory could be translated into new strategies for the immunotherapy of cancer in humans. By doing so, the research team of Prof. Ochsenbein was able in recent years to define various molecular mechanisms by which leukaemia stem cells evade the immune response. The results of these studies have been published in some of the best scientific journals including *Cell Stem Cell* and *Science Translational Medicine*. Of particularly great importance was the discovery that the interaction of CD70 with CD27 and subsequent signalling events has



Professor Adrian Ochsenbein



Professor Markus Manz

great therapeutic potential. As a consequence of this a clinical trial of blocking this signalling pathway in patients with acute myeloid leukaemia was successfully developed.

The scientific contributions to cancer research made by Prof. Ochsenbein are not only of fundamental relevance, but also of great importance for the successful development of new, original methods of cancer treatment using immunotherapy.

#### **Better understanding of the genesis of haematolymphoid malignancies**

The Otto Naegeli Prize 2016 is awarded to *Professor Markus Manz*, the current chairman of the Department of Haematology at Zürich University Hospital, in recognition of his exceptional achievements as a clinician and scientist in the fields of haematology and haematological malignancies.

His research has focused on investigating the development and function of the haematopoietic and immune systems with the aim of better understanding the genesis of haematolymphoid malignancies. The research of Prof. Manz has contributed to major advances in understanding the regulation of dendritic cell development, notably showing in mice and then in humans that dendritic cell development is conserved along both lymphoid and myeloid developmental pathways, a so far unique finding in haematopoiesis. Furthermore, by transplanting human haematopoietic stem and

progenitor cells over xenogeneic barriers into the livers of newborn immunodeficient mice, Prof. Manz and his team were able to establish, for the first time, human T cell, B cell and dendritic cell development in a small animal model. This unique mouse model of human haematolymphopoiesis is now used by researchers worldwide to study human haematolymphopoiesis, human haematological malignancies, as well as human lymphoid system-specific infectious diseases and human haematolymphoid cell gene therapy. The relevance of the above scientific milestones is recognised by publications in leading research journals including *Science* and the *Journal of Experimental Medicine*.

The scientific contributions made by Prof. Manz not only provide a better understanding of the role of haematopoietic stem cells in health and disease, but also insight into novel therapeutic options for patients suffering from haematological diseases.

#### **Abbildungen**

Prof. A. Ochsenbein: © KEYSTONE | Alessandro della Valle  
Prof. M. Manz: © KEYSTONE | Ennio Leanza

The "Otto Naegeli Prize" was established in 1960, in memory of Professor Otto Naegeli, the distinguished scientist and teacher of internal medicine at the University of Zürich, who died in 1938 (<http://www.otto-naegeli-preis.ch/home-2.html>).

The "Otto Naegeli Prize" aims to stimulate and recognize outstanding medical and biomedical research, and is awarded every other year to researchers in Switzerland. Currently the prize money amounts to CHF 200000.

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