

Healthcare industry BW

Otmar D. Wiestler – combining excellent research and cancer medicine

The University of Tübingen Medical Faculty's award of an honorary doctorate to the Chairman of the Executive Board of the German Cancer Research Center, Professor Dr. Otmar D. Wiestler, was not just a distinction awarded to a renowned neuropathologist, oncologist and stem cell researcher, it also honoured a well-known personality who has made a significant contribution to shaping health research in Germany.

On 29th October 2012 at the inauguration celebration of the "German Consortium for Translational Cancer Research", in which the German Cancer Research Center (DKFZ) is the core centre, the Chairman of the DKFZ Executive Board and Scientific Director Prof. Dr. Otmar D. Wiestler said: "In our fight against cancer, the combination of first-class research and innovative cancer medicine is of pivotal importance." This conviction is not only the basis of the German Consortium for Translational Cancer Research's concept, but also underlies Wiestler's professional career.

As a neuropathologist, stem cell researcher and director of numerous research institutions, Wiestler has always kept his eye on the clinical application of scientific findings and aimed to improve outcomes for cancer patients. This is what is now referred to as translational medicine, a term that has been popularised over the last ten years.

The years of exploration



Prof. Dr. Otmar D. Wiestler
© DKFZ

Otmar D. Wiestler studied medicine in his native city of Freiburg in Germany. He received his licence to practice medicine in 1981 and went on to work as resident doctor under the renowned neurooncologist Professor Dr. Paul Kleihues in the Department of Neuropathology at the University of Freiburg Medical Centre. After completing his doctoral degree, Wiestler joined cancer researcher Professor Dr. Gernot Walter at the reputed University of California San Diego (UCSD), USA, where he established the field of molecular tumour pathology in the Department of Pathology and studied the role of tumour antigens in the transformation of normal cells into tumour cells and in the suppression of tumours.

After three years as postdoctoral fellow at the UCSD, Wiestler joined Professor Kleihues, who had since moved to Zurich and become the director of the Department of Neuropathology at Zurich University Hospital. Wiestler started as resident doctor, later becoming a senior physician. He habilitated in the field of pathology at the University of Zurich and in 1991 accepted a post as chair of neuropathology at the University of Bonn.

Neuropathologist at the University of Bonn

For more than ten years following his appointment, Wiestler led the Institute of Neuropathology at

Bonn University Hospital. Under his leadership, the institute became a major centre for molecular genetics and the molecular neuropathology of brain tumours in Germany. In 1994, the Brain Tumour Reference Centre of the German Society of Neuropathology and Neuroanatomy, which Kleihues originally established at the University of Freiburg and transferred to the University of Zurich, was relocated to the Institute of Neuropathology in Bonn where it was headed up by Wiestler. The Brain Tumour Reference Centre is used by medical doctors as a reference in the diagnosis and treatment of difficult cases, and it is also a training institution as well as supervising neurooncological therapy studies and developing and evaluating molecular genetic diagnostic tests.

During this time, Wiestler was also the spokesperson of a cooperative research centre in Bonn that focused on the molecular basics of CNS diseases. Amongst other things, Wiestler's own research projects dealt with the molecular neuropathology and pathogenesis of focal epilepsies, which originate from specific brain areas.



Prof. Wiestler signing a young scientists exchange programme with the National Cancer Institute (18th Feb. 2010) in Washington, D.C., USA.

© DKFZ

Research into neural stem cells used to be one of Wiestler's and his colleagues' major priorities. One activity of note during this time was Wiestler's cooperation with Professor Dr. Oliver Brüstle, who, prior to being appointed Director of the Institute of Reconstructive Neurobiology at the University of Bonn's Life & Brain research centre, was head of a group of researchers at Wiestler's institute. Wiestler had already met Brüstle, who is now known beyond his own discipline for his work with human embryonic stem cells, when he did his habilitation at the University Hospital of Zurich. The self-renewing stem cells in the human brain also have the potential to regenerate differentiated nerve cells. This is why many terminally ill people place such high hopes on them, despite the fact that the use of stem cells for the treatment of neurodegenerative diseases is still a long way off. This makes research into stem cells and their potential applications all the more necessary; Wiestler has made significant contributions to driving forward and supporting stem cell research – in his roles as professor in Bonn, chairman of the Stem Cell Research competence network in North Rhine-Westphalia and chairman and scientific director of the DKFZ.

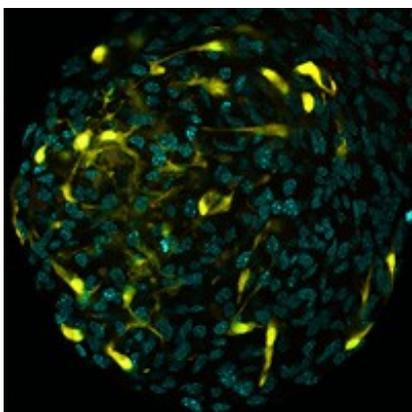
Director of the German Cancer Research Center

In January 2003, Otmar Wiestler succeeded Professor Dr. Harald zur Hausen as chairman of the executive board and scientific director of the German Cancer Research Center (DKFZ) in Heidelberg. In order to be able to deal with the huge amount of knowledge obtained and technological progress made in the field of cancer research over the past years, a large number of

junior researcher groups were established at the DKFZ under Wiestler's leadership. Several clinical Cooperation Units, jointly run with the Heidelberg University Hospital and the Mannheim Medical School, were established, all of them committed to the concept of translating knowledge "from bench to bedside" by bringing together basic research and clinical application. A new research priority (Translational Cancer Research), which is closely linked with the National Centre for Tumour Diseases (NCT) in Heidelberg, was established. The NCT – founded jointly by the DKFZ, Heidelberg University Hospital and German Cancer Aid in 2004, has become the German cancer translation centre par excellence mainly thanks to the close cooperation between cancer researchers and doctors that helps patients benefit early from novel treatment approaches.

The treatment outcome of cancer patients has increased considerably over the last few years. Around 50% of all cancer patients in Germany can be cured. However, Wiestler is careful to point out that this still means that around 50% of all cancer patients die from the disease. "This situation needs to change." Around 80 percent of patients suffering from malignant brain tumours such as glioblastomas – which are Wiestler's main focus of study – die within 12 months of diagnosis, but promising innovative treatment approaches are being developed. Researchers led by Professor Dr. Ana Martin-Vilalba at the DKFZ have developed a substance for treating glioblastoma that blocks TGF- β signalling. In the mouse model, a combination of radiation treatment with this new substance was found to slow down the growth of malignant brain tumours and to prolong the animals' survival. A multicentre clinical trial is currently being conducted with the aim of finding out whether patients might also benefit from a combination of the substance with radiation treatment. This is a prime example of the successful and close cooperation between DKFZ research groups and doctors from the Heidelberg University Hospital in clinical Cooperation Units.

The DKFZ also carries out research on paediatric brain tumours, which account for the largest number of cancer-related deaths in children. It coordinates the PedBrain tumour research project, which is part of the International Cancer Genome Consortium (ICGC). The ICGC, which aims to analyse and obtain a comprehensive description of genomic, transcriptomic and epigenomic changes in 50 different tumour types and compare the data with healthy tissue, generates huge amounts of data that are analysed in the DKFZ's bioinformatics department. "In order to be able to use the findings we are able to deduce from the huge amount of data in cancer treatment, intelligent IT systems are needed," said Wiestler in 2011 at the signing of a strategic partnering agreement with IBM that aims to develop strategies and methods for data to be turned into useful information for cancer medicine, cancer therapy decisions, and other issues.



"Mouse neurosphere" created from neural stem cells.
© DKFZ

Ever since Wiestler became head of the DKFZ, he has been committed to supporting stem cell

research. A few years ago, the topic of stem cells and cancer was only being dealt with by a handful of specialists; considerable progress in cancer research has in the meantime been made and it is now assumed that the majority of cancers develop from stem cells. "Genes that regulate the growth of stem cells are also frequently involved in tumour development," Wiestler said. In addition, many tumours possess so-called cancer stem cells that possess the capacity to self-renew and to cause the heterogeneous lineages of cancer cells that comprise the tumour. These cells are relatively resistant to chemotherapy and radiation. They persist in tumours as a distinct population and cause relapse and metastasis by giving rise to new tumours following the removal of the primary tumour.

Wiestler is convinced that research into tumour stem cells will make a significant contribution to improving cancer treatment in the future. In 2008, Professor Dr. Andreas Trumpp, who has made a name for himself with research into tumour stem cells, joined the DKFZ. Trumpp also became the director of HI-STEM, the Heidelberg Institute for Stem Cell Technology and Experimental Medicine, a non-profit public-private partnership between the DKFZ and the Dietmar Hopp Foundation with the aim of advancing the development of new drugs and treatments for different types of cancer and promoting their clinical application. HI-STEM became a central partner of the "Cellular and Molecular Medicine" leading-edge cluster which the Biotech Region Rhine-Neckar (BioRN) was awarded in 2008 and which Wiestler helped establish.

Honorary doctorate from the University of Tübingen



Inauguration celebration of the German Consortium for Translational Cancer Research at the DKFZ on 29th October 2012. In the photo Prof. Dr. O. Wiestler stands at the lectern while Germany's Research Minister Prof. Dr. A. Schavan and Nobel laureate Prof. Dr. H. zur Hausen are in the foreground on the right.

© DKFZ

On 20th October 2012, the Medical Faculty of the University of Tübingen awarded Professor Dr. Otmar D. Wiestler an honorary doctorate for his achievements in neuropathological, neurological

and oncological research. The speeches made in Wiestler's honour highlighted his achievements in Bonn and Heidelberg as well as his contributions to health research in Germany in general. As Vice President for Health Research at the Helmholtz Association, Wiestler supported the establishment of the German Centre for Neurodegenerative Diseases, which also involves the Tübingen University Hospital and the Tübingen-based Hertie Institute for Clinical Brain Research. Wiestler is also a member of the Boards of Trustees of the Hertie Institute and the Hertie Foundation. He also made significant contributions to the concept and establishment of the German Consortium for Translational Cancer Research. "With the establishment of the German Consortium for Translational Cancer Research, we are hoping to transfer the concept of outstanding cooperation between cancer researchers and doctors that we have established at the National Centre for Tumour Diseases to other institutions in Germany," said Wiestler at the official opening of the German Consortium for Translational Cancer Research a few days after he was awarded the honorary doctorate. The Medical Faculty at the University Hospital in Tübingen is one of the partnering sites where a translation centre will be established in cooperation with the DKFZ.

Article

12-Nov-2012

EJ (02.11.2012)

BioRN

© BIOPRO Baden-Württemberg GmbH