

## **The Heinrich Wieland Prize 2012 goes to Carolyn R. Bertozzi**

**The chemist's breakthrough method of changing cellular sugar codes can pave the way for new therapies, e.g. against cancer**

Munich, October 18<sup>th</sup>, 2012. *Dr Carolyn R. Bertozzi, Professor of Chemistry and Professor of Cell and Molecular Biology at the University of California at Berkeley, has been awarded the international Heinrich Wieland Prize 2012. The prize honours her pioneering research on the biological functions of cellular sugars, especially the sugar modifications associated with cancer, inflammation and infection. With her methodological breakthrough, bioorthogonal chemistry, Bertozzi has opened the door to explore the largely uncharted territory of sugar biology, thus paving the way for new diagnoses and therapies. The award of the Boehringer Ingelheim Foundation is endowed with EUR 50,000.*

Dr Bertozzi's research is situated at the intersection between synthetic chemistry and biology. She focuses on so-called glycans, a hugely diverse group of sugar chains fulfilling vital functions in humans and other living beings. Sugars exposed at the cell surface help to recognize bacterial and viral infections and modulate the immune response, while others regulate various processes within the cell. Sugar chains are attached to about 50% of our proteins, but in contrast to proteins or DNA, their compositions and functions are extremely hard to decipher due to their complexity and prevailing technical obstacles.

Bertozzi has developed a new method: she alters the respective sugar codes by uniquely attaching so-called bioorthogonal reporters or labels. These small molecules are chemically synthesized and then specifically inserted into different classes of glycans by the cell itself. This pioneering design can differentiate healthy from diseased cells by monitoring their sugar codes, thereby tracking tumor development and growth. These bioorthogonal biomarkers are also applicable to protein engineering and have led to a new technology for the development of novel protein drugs. Bertozzi also designs carbon nanotubes meant to transport active pharmaceutical ingredients in the body.

„Professor Bertozzi has founded the field of bioorthogonal chemistry. In her groundbreaking approach, she creatively exploits the benefits of synthetic chemistry to study vital processes within living beings. Her breakthrough method to identify sugar patterns on the cell surface is a milestone for our understanding of the functions of sugars in health and disease and paves the way for novel diagnostic and therapeutic approaches,“ says Professor Dr Wolfgang Baumeister, chair of the Board of Trustees of the Heinrich Wieland Prize.

Carolyn R. Bertozzi studied chemistry in Harvard and Berkeley and obtained her PhD in Berkeley in 1993. After that, she did postdoctoral work at the University of California in San Francisco; in 1996, she joined the UC Berkeley faculty, where she is presently Professor of

Cell and Molecular Biology and Chemistry. In addition, she is an investigator of the Howard Hughes Medical Institute. She was the Director of The Molecular Foundry, a nanoscience institute at the Lawrence Berkeley National Laboratory from 2006-2010.

The international Heinrich Wieland Prize (HWP) is endowed with 50,000 Euros and honours outstanding research on biologically active molecules and systems and their clinical impact in chemistry, biochemistry and physiology. It is named after the German chemist and Nobel Prize winner Heinrich Otto Wieland (1877 – 1957), who was professor of chemistry in Munich for many years. The prize has been awarded annually by an independent board of trustees since 1964; in 2011, the Boehringer Ingelheim Foundation assumed sponsorship. The Boehringer Ingelheim Foundation is an independent, non-profit foundation for the promotion of medical, biological, chemical and pharmaceutical research (see [www.boehringer-ingelheim-stiftung.de](http://www.boehringer-ingelheim-stiftung.de)). Further information on the history of the prize can be found at [www.heinrich-wieland-preis.de](http://www.heinrich-wieland-preis.de).

The public **award ceremony** takes place on the **18th of October 2012 from 2 to 4 p.m.** at Buchner Auditorium of LMU Munich (Department of Chemistry and Pharmacy, LMU Munich, Butenandtstr. 5-13, House F, Room FU 0.001, 81377 Munich, Germany). Prof. Bertozzi will present on „**Challenges and opportunities of *in vivo* chemistry**“.

Members of the media are most welcome. Please RSVP at [kerstin.terrenoire@bifonds.de](mailto:kerstin.terrenoire@bifonds.de).

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