



## Fusion for brain signals – 100,000 euro Heinrich Wieland Prize for Reinhard Jahn

Boehringer Ingelheim Stiftung

**Mainz, Germany, August 7, 2014: Professor Reinhard Jahn has been selected as the recipient of the international Heinrich Wieland Prize for his paradigmatic studies on membrane fusion, synaptic vesicles, and neurotransmitter release – processes that occur when cells grow, transport substances, or signal. With the 100,000 euro prize the Boehringer Ingelheim Foundation is honouring the pioneering achievements of the Director at the Max Planck Institute for Biophysical Chemistry in Göttingen, Germany. To mark the 50th anniversary of the prize, the foundation will hold a scientific symposium and a festive award ceremony on October 21, 2014, in the Munich Residenz in Munich, Germany.**

7. August 2014

Around 100 billion nerve cells are packed into the human brain, where they constantly exchange signals. Despite their density, there remains a small gap between the individual cells. The signals are carried across this gap by molecules called neurotransmitters, which wait for their cue in the synaptic vesicles, the nerve cell's tiny storage bubbles. To move into the gap, the neurotransmitters need to cross the cell membrane without breaching its integrity, as this could result in the death of the cell. The solution is elegant: the membranes of both the vesicle and the cell fuse seamlessly, releasing the neurotransmitters into the gap. This process of membrane fusion is not confined to the brain, but occurs in all body cells when they grow, transport substances, or release hormones.

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Since the early 1980s, Reinhard Jahn has steadily advanced our understanding of these basic processes. He was one of the first scientists to prove that so-called SNARE proteins, situated on membranes, are pivotal to sending signals from one nerve cell to another. He discovered that tetanus and botulinum toxins cleave the proteins, thereby inhibiting membrane fusion and disrupting signal transmission. Building on these results, Reinhard Jahn has developed a model of membrane fusion that is still valid today: the SNARE proteins sitting on the vesicle and cell membrane interlock with each other. Similar to a zipper, they pull the membranes closer and closer together until they finally fuse. Besides the SNARE proteins, Reinhard Jahn has discovered and characterized numerous other proteins involved in membrane fusion. In addition, he was the first to describe the composition of synaptic vesicles by analysing their building blocks.

“Reinhard Jahn has significantly shaped and advanced the field of neurotransmitter release and membrane fusion. His outstanding discoveries have changed the textbooks,” says Professor Wolfgang Baumeister, Chair of the Scientific Selection Committee of the Heinrich Wieland Prize and Director at the Max Planck Institute of Biochemistry in Martinsried, Germany. Professor Thomas Südhof, last year's Nobel Laureate, emphasized the significance of Jahn's work in his nomination letter: “His contributions to our field were fundamental and monumental. I cannot think of a more fitting candidate for the prestigious Heinrich Wieland Prize.”

### 50 years Heinrich Wieland Prize

To mark the 50th anniversary of the international Heinrich Wieland Prize, the Boehringer Ingelheim Foundation has raised the prize money permanently to

Vorstand:  
Otto Boehringer (Vorsitzender)  
Prof. Dr. Dr. Andreas Barner  
Christoph Boehringer  
Prof. Dr. Michael P. Manns

Stiftungszweck:  
Förderung der medizinischen,  
biologischen, chemischen und  
pharmazeutischen Wissenschaft

Sitz:  
Ingelheim am Rhein

100,000 euros. In addition to the festive award ceremony, it is organizing an international scientific symposium. Besides Reinhard Jahn, the speakers will include past recipients of the Heinrich Wieland Prize such as Nobel Laureate James Rothman.

Both events will take place in the Munich Residenz on October 21, 2014. Junior scientists may apply for poster presentations, travel grants, and a “Meet the Laureates” session with speakers and Laureates.

The programme of the symposium is enclosed. To participate in symposium or award ceremony (both in English), you may register starting August 9th at [www.heinrich-wieland-prize.de](http://www.heinrich-wieland-prize.de)

Journalists are cordially invited. Please contact Kirsten Achenbach at the address below.

### **50th Anniversary Heinrich Wieland Prize**

October 21, 2014

9.00 AM to 5.00 PM Symposium (registration 8.30 AM)

7.00 PM to 10.00 PM Festive award ceremony

Max Joseph Hall, Munich Residenz, Residenzstrasse 1, 80333 Munich, Germany

### **Professor Reinhard Jahn**

Reinhard Jahn studied biology and chemistry at the University of Göttingen, Germany. He subsequently worked for four years at Yale University and Rockefeller University in the US. He returned to Germany in 1986 and took up a position as a junior group leader at the Max Planck Institute for Psychiatry in Martinsried until 1991. After holding a professorship at the Yale University School of Medicine with a joint appointment at the Howard Hughes Medical Institute for six years, he assumed his current position as Director at the Max Planck Institute for Biophysical Chemistry in Göttingen. He has been honoured with the most important German research prize, the Gottfried Wilhelm Leibniz Prize (2000), and has also received the Ernst Jung Prize for Medicine (2006) and the Science Prize of Lower Saxony (2010). Furthermore, he advocates better conditions for graduate students and mentors female scientists.

### **Heinrich Wieland Prize**

This international award honours outstanding research on biologically active molecules and systems in the fields of chemistry, biochemistry, and physiology as well as on their clinical importance ([www.heinrich-wieland-prize.de](http://www.heinrich-wieland-prize.de)). In 2014, to mark its 50th anniversary, the Boehringer Ingelheim Foundation permanently raised the prize money to 100,000 euros. The prize has been awarded annually since 1964 and is named after Nobel Laureate Heinrich Otto Wieland (1877–1957). A scientific Board of Trustees selects the laureates from the tendered nominations. Among the former awardees are the later Nobel Laureates Michael Brown, Joseph Goldstein, Bengt Samuelsson, and James Rothman. Since 2011, the prize has been endowed by the Boehringer Ingelheim Foundation, a non-profit organization committed to the promotion of the medical, biological, chemical, and pharmaceutical sciences in Germany ([www.boehringer-ingelheim-stiftung.de](http://www.boehringer-ingelheim-stiftung.de)).

**High resolution images are available:**

**Image Jahn:**

Caption: Reinhard Jahn, Director at the Max Planck Institute for Biophysical Chemistry in Göttingen, Germany receives the 100,00 euro Heinrich Wieland Prize of the Boehringer Ingelheim Foundation

Copyright: University of Göttingen

**Image Vesicle:**

Caption: Model of a synaptic vesicle filled with neurotransmitters (red): The membrane (yellow) of the vesicle is packed with proteins, e.g., SNARE complexes (red/orange) that help in the vesicle fusion process.

Copyright: Reinhard Jahn, Max Planck Institute for Biophysical Chemistry in Göttingen, Germany (MPI-BPC)

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