

PRESS RELEASE

Prestigious ERC Advanced Grant awarded to IMB Director Christof Niehrs

18 April 2018. *The European Research Council (ERC) has announced the awarding of €653 million in funding in the 2017 call for ERC Advanced Grants. Professor Christof Niehrs from the Institute of Molecular Biology (IMB) in Mainz has received one of these highly prestigious awards. These grants go to established leaders to enable the pursuit of unproven ideas that have the potential to lead to major discoveries. Christof Niehrs is the Founding Director of IMB and will use the funding, worth €2 million, to pursue research into epigenetic gene regulation.*

To ensure that genes are expressed in the right cells and at the right time, cells employ epigenetic mechanisms, which alter gene activity without changing the sequence of the gene itself. One prominent epigenetic mechanism is the methylation of DNA. In this process, DNA sequences are modified through the addition of a small chemical group to one of the four bases in DNA, cytosine. When cytosines are methylated in the control regions of a gene, the affected gene is typically inactivated. To re-activate it, these epigenetic modifications have to be removed by the action of enzymes called DNA demethylases. This demethylation process is still poorly understood.

Christof Niehrs and his colleagues will use the ERC Advanced Grant to probe how so-called long noncoding RNAs (lncRNAs) may act like a zip code to target the demethylation machinery to specific sites in the vast genome. As Christof explains: “This ERC grant gives us the opportunity to dive deeply into the world of RNA regulation of epigenetic states. Over the next five years, we want to open a new chapter in epigenetic regulation, especially in the stem cell pluripotency and differentiation.”

The elucidation of lncRNA-mediated DNA demethylation will not only broaden the understanding of how cells regulate gene activity, it also holds the promise to tackle diseases. As each lncRNA is specific to a particular gene, control of inappropriately activated genes may become a matter of targeting the right lncRNA to restore gene control and thus health.

About Christof Niehrs

Christof Niehrs was appointed head of the laboratory of Molecular Embryology at the German Cancer Research Center (DKFZ) in 1994. In 2010, he became Founding Director of the Institute of Molecular Biology (IMB) Mainz and Professor of Biology at Johannes Gutenberg University. He received the prestigious Leibniz Prize from the German Research Foundation in 2003. He is Honorary Professor at the University of Heidelberg and he is a member of various learned societies (Heidelberger Akademie der Wissenschaften, Akademie der Wissenschaften und der Literatur Mainz, German National Academy of Sciences Leopoldina, American Academy of Arts and Sciences).

About ERC Advanced grants

ERC Advanced Grants are awarded annually to Europe’s top researchers to carry out their research at an institution in Europe. The funding is provided by the ERC to excellent established scientists who

have a track-record of significant research achievements in the last 10 years. The Principal Investigators are exceptional leaders in terms of originality and significance of their research contributions. Advanced Grants may be awarded up to € 2.5 million for a period of 5 years. At IMB Executive Director Helle Ulrich (2013) and Scientific Director Christof Niehrs (2010) have previously been awarded ERC Advanced Grants. Scientific Director René Ketting (2008) and Group Leader Anton Khmelinskii (2018) are recipients of an ERC Starting Grant. Additionally, Adjunct Director Edward Lemke (2015) has received an ERC Consolidator Grant.

Further details

Further information about Christof's work can be found at <https://www.imb.de/research/niehrs/research/> and more information about the ERC at <https://erc.europa.eu/>.

About the Institute of Molecular Biology gGmbH

The Institute of Molecular Biology gGmbH (IMB) is a centre of excellence in the life sciences that was established in 2011 on the campus of Johannes Gutenberg University Mainz (JGU). Research at IMB concentrates on three cutting-edge areas: epigenetics, developmental biology, and genome stability. The institute is a prime example of a successful collaboration between public authorities and a private foundation. The Boehringer Ingelheim Foundation has dedicated 100 million euros for a period of 10 years to cover the operating costs for research at IMB, while the state of Rhineland-Palatinate provided approximately 50 million euros for the construction of a state-of-the-art building. For more information about IMB, please visit: www.imb.de.

About Johannes Gutenberg University Mainz

Johannes Gutenberg University Mainz (JGU) is a globally renowned research university with about 32,500 students. With its PRISMA Cluster of Excellence and the [MAINZ](#) Graduate School of Excellence, JGU has successfully demonstrated its research capacity in the latest German Excellence Initiative. Thanks to its outstanding researchers and the establishment of vibrant research networks specifically in the fields of particle and hadron physics, materials sciences, the life sciences as well as translational medicine, Mainz University is in the international top league of research and maintains close ties with regional, national, and international partners in the scientific, cultural, and business sectors.

Boehringer Ingelheim Foundation

The Boehringer Ingelheim Foundation is an independent, non-profit organisation committed to the promotion of the medical, biological, chemical, and pharmaceutical sciences. It was established in 1977 by Hubertus Liebrecht (1931–1991), a member of the shareholder family of the company Boehringer Ingelheim. With the Perspectives Programme "Plus 3" and the Exploration Grants, the foundation supports independent junior group leaders. It also endows the internationally renowned Heinrich Wieland Prize as well as awards for up-and-coming scientists. In addition, the foundation pledged to donate a total of 100 million euros over ten years to the University of Mainz for the scientific running of the Institute of Molecular Biology (IMB) and a further 50 million euros for the development of the life sciences. www.bistiftung.de

Press contact for further information

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