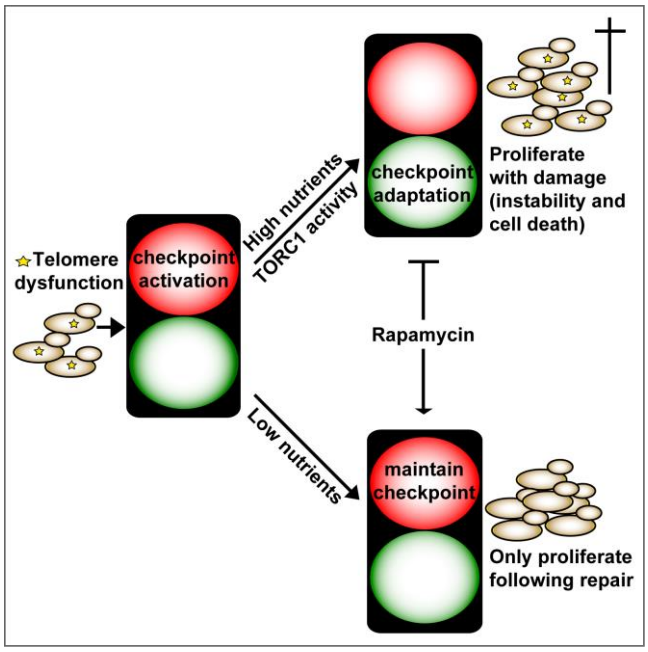
PRESS RELEASE

EMBO Young Investigator joins IMB to study telomere biology

1 November, 2014. *The Institute of Molecular Biology (IMB) in Mainz, Germany, welcomes Dr Brian Luke as a new Group Leader. His work will focus on understanding the biology of telomeres, which play a critical role in cellular senescence and the prevention of tumorigenesis.*

Telomeres are found at the ends of linear chromosomes. Free DNA ends are normally recognised by the cell as being broken and trigger a DNA damage response, which stops the cell from dividing and propagating the damage to other cells. At the ends of chromosomes however, telomeres act as a cap to protect the DNA from this response. Problems with telomere function can result in tissue loss due to increased rates of cellular senescence, as well as chromosomal abnormalities associated with ageing.

Dr Luke's research at IMB will focus on understanding multiple aspects of the structure and function of telomeres. As part of this, his group plans to explore the role of a newly discovered non-coding telomere repeat containing RNA (TERRA), which is transcribed from telomeres and is important for telomere function. He will also investigate telomere looping, which is understood to play a role in protecting chromosome ends from degradation. This research will provide valuable insights into how the structure of telomeres is linked to their function both during senescence and in cancer cells where telomere maintenance is required for continued tumor growth.



In their recent paper, published in September in Cell Reports*, Luke's group show how the availability of nutrients to a cell can affect its capacity to proliferate in the presence of DNA damage. Telomere dysfunction activates the DNA damage checkpoint, which causes the cell to stop dividing. In the presence of high nutrient levels, cells adapt and proliferate despite the presence of damage (checkpoint adaptation), which leads to cell death and genome instability. Nutrient deprivation can prevent adaptation and uphold the checkpoint until repair has been completed (Klermund* et al*, 2014).*

Last year, Dr Luke was elected as an EMBO Young Investigator, the only scientist working in Germany to receive this honour in 2013. He joins IMB from his position as a Group Leader at the Centre for Molecular Biology (ZMBH), University of Heidelberg.

Further details
Further information about Dr Luke's research can be found at www.imb.de/luke
More information about EMBO Young Investigators can be found at http://www.embo.org/funding-awards/young-investigators

Reference
Klermund J, Bender K, and Luke B (2014). High nutrient levels and TORC1 activity reduce cell viability following prolonged telomere dysfunction and cell cycle arrest. *Cell Reports*, 9, 1-12, doi: http://dx.doi.org/10.1016/j.celrep.2014.08.053

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. Research at IMB concentrates on three cutting-edge areas: epigenetics, developmental biology and DNA repair. 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 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 for the construction of a state-of-the-art building. For more information about IMB please visit: www.imb.de

About the 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. Through its PLUS 3 Perspectives Programme and Exploration Grants, the foundation supports independent group leaders; it also endows the internationally renowned Heinrich Wieland Prize as well as awards for up-and-coming scientists. The foundation has granted €100 million over a period of ten years to finance the scientific activities of the Institute of Molecular Biology (IMB). For more information about the foundation and its programmes, please visit www.boehringer-ingelheim-stiftung.de

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