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ERC Consolidator Grant for Dr Leo Kurian

Prestigious EU research prize will support fundamental genetic research into the development of the human heart / In the long run, insights into the self-organization of embryos could help not only to better understand how biological systems are built, but also to develop safe, personalized approaches to engineering tissue and organs for replacement

Dr Leo Kurian of the Institute of Neurophysiology at the University of Cologne's Faculty of Medicine has been granted the coveted Consolidator Grant by the European Research Council (ERC). In total, he will receive up to 1.98 million euros in research funding over a period of five years. Kurian's laboratory studies how the information encoded on DNA is accurately communicated to allow for the healthy development of an embryo.

Among the layers of gene expression control, the way mRNA translation is regulated is among the processes least well understood. The Consolidator Grant Kurian received for his proposed research programme TRANSCEND will be used to revalue the current scientific understanding of the regulation of mRNA translation central to embryonic cell fate decisions and cellular identity in the context of human cardiac development. 'This ERC Grant will allow me and my team to understand the fundamental principles by which information from the DNA is accurately and selectively translated in time and space to program the development of the human heart – and how its aberrations cause cardiac diseases. I am very thankful to the University of Cologne, my adopted home, and the ERC for providing me with this opportunity,' Kurian commented.

The loss of translational control is a key reason for detrimental cardiac diseases such as hypertrophic cardiomyopathy, in which the left-sided outflow tract of the heart narrows, the heart muscle stiffens, and cardiac arrhythmias can occur. Therefore, a significant part of the grant is planned to go into understanding how translational control mechanisms are dysregulated, leading to the progressive weakening of the heart.

Ultimately, TRANSCEND aims at transforming the current understanding of translational control over cell-fate decisions and potentially opening up innovative avenues for a controlled therapeutic restoration of cardiac function.

Leo Kurian received his Master's Degree in Biotechnology from the University of Madras, Chennai, India in 2003. After moving to Cologne he obtained his doctorate in 2009 at the University of Cologne's Institute for Genetics. He did his postdoctoral research at the Salk Institute for Biological Studies, San Diego, California, followed by the University of California San Diego (UCSD). Since 2014 he has been a Junior Research Group Leader at the Center for Molecular Medicine Cologne (CMMC), an interdisciplinary biomedical research institution at the UoC's Biomedical Campus dedicated to advancing the current understanding of the underlying molecular and cellular mechanisms of human diseases. Currently, Kurian is also an Associated Principal Investigator at the Institute of Genetics and at the CECAD Cluster of Excellence in Aging Research.

The European Research Council (ERC) is the European Union's funding organization for excellent frontier research. Every year, it selects and funds the best creative researchers of any nationality to run projects based in Europe. ERC Consolidator Grants are awarded to researchers with seven to twelve years of experience since the completion of their PhD (or equivalent degree). The research must be conducted in a public or private research organization located in one of the EU Member States or Associated Countries.

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More information:

https://erc.europa.eu/news/erc-2021-consolidator-grants-results