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**DKFZ-researcher receives ERC-Grant
Fatty acid from food as a signaling molecule for cell growth**

ERC Consolidator Grants by the European Research Council (ERC) support excellent researchers to help them consolidate their independent careers. Aurelio Teleman from the German Cancer Research Center (DKFZ) recently received a Consolidator Grant, which is already the second prestigious ERC grant that he was able to attract. The grant comprising €2 million will enable Teleman to investigate how a fatty acid from food controls cellular growth as a signaling molecule and may even play a role in the development of cancer.

With the researchers in his department at the German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) in Heidelberg, Aurelio Teleman is studying metabolic processes and how their dysfunction plays a role in cancer. Recently, Teleman and his co-workers identified a new signaling pathway in the cell. They discovered that a fatty acid (stearic acid) that had previously been considered to be a simple metabolic product also has signaling functions, thus regulating biochemical processes in the cell.

Teleman and his team demonstrated in flies as well as in cancer cells that stearic acid regulates the performance of mitochondria. These organelles serve as powerhouses that supply the cell with vital biochemical energy. When the researchers added stearic acid to fly food, the animals' mitochondria performed better; when they kept fatty acid levels low, the organelles fragmented. A protein called transferrin receptor was identified as a key player in this mechanism.

Teleman plans to use the funds from the Consolidator Grant to investigate whether and how stearic acid that is ingested with the diet also influences other cellular functions. His hypothesis is well grounded: Using a newly developed method, his team demonstrated that stearic acid binds not only to the transferrin receptor but also to 30 other cellular proteins. These include a remarkable number of proteins that are involved in growth-promoting signaling pathways.

Teleman now plans to examine how the binding of stearic acid affects the function of these proteins and what happens in the absence of the fatty acid as a binding partner. "Stearic acid is part of our diet; it is present in ample quantities in animal fats and cocoa butter," said Teleman. "Therefore, our research is ultimately about how a dietary component influences cellular growth – both in the healthy state and in dysfunctional states that can lead to cancer and other serious diseases."

Born in the United States, Aurelio Teleman studied biochemistry at Harvard University, where he graduated in 1998. For his PhD studies, he moved to London Imperial College and subsequently to EMBL in Heidelberg, where he earned his PhD in 2004 and continued his research work for another three years. Starting from 2007, Teleman headed a junior research group at the DKFZ; since 2012, he has been a research department head.

In 2010, the ERC already supported Teleman's research with a Starting Grant comprising €1.5 million. In 2016, he was honored for his research with the Johann Georg Zimmermann Prize.

The European Research Council awarded 314 Consolidator Grants in 2016; 50 of these were given to German scientists.

A picture for this press release is available at:

http://www.dkfz.de/de/presse/pressemitteilungen/2017/bilder/Teleman_Aurelio.jpg

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The German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) with its more than 3,000 employees is the largest biomedical research institute in Germany. At DKFZ, more than 1,000 scientists investigate how cancer develops, identify cancer risk factors and endeavor to find new strategies to prevent people from getting cancer. They develop novel approaches to make tumor diagnosis more precise and treatment of cancer patients more successful. The staff of the Cancer Information Service (KID) offers information about the widespread disease of cancer for patients, their families, and the general public. Jointly with Heidelberg University Hospital, DKFZ has established the National Center for Tumor Diseases (NCT) Heidelberg, where promising approaches from cancer research are translated into the clinic. In the German Consortium for Translational Cancer Research (DKTK), one of six German Centers for Health Research, DKFZ maintains translational centers at seven university partnering sites. Combining excellent university hospitals with high-profile research at a Helmholtz Center is an important contribution to improving the chances of cancer patients. DKFZ is a member of the Helmholtz Association of National Research Centers, with ninety percent of its funding coming from the German Federal Ministry of Education and Research and the remaining ten percent from the State of Baden-Württemberg.

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