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**Lasker Award for Ralf Bartenschlager**

**Ralf Bartenschlager, Virologist and cancer researcher at the Heidelberg University Hospital and the German Cancer Research Center (DKFZ) has received the Lasker-DeBakey Medical Research Award endowed with 250 000 Dollar. This price, which is awarded annually in three categories by the Lasker Foundation in New York, is the highest distinction for medical science in the USA. Many prize winners have later gone on to receive the Nobel Prize. Bartenschlager and his group were the first to propagate the hepatitis C virus in the lab. This has made it possible to develop targeted therapies against the virus that can lead to chronic infection and cirrhosis or cancer of the liver.**

“I am delighted and deeply grateful for receiving the Lasker-DeBakey Award“, Ralf Bartenschlager said in a first statement. “I would like to thank especially my coworkers and colleagues, who made it possible to carry out this successful scientific work on the hepatitis C virus.” He went on to point out that “this prize is an incentive to continue the research on this treacherous disease. The virus has still not been defeated. There is still no vaccine, and many people are infected with hepatitis C without even knowing it.” Bartenschlager receives this prize together with his colleagues Charles Rice from Rockefeller University, New York, and Michael Sofia, Arbutus Biopharma, USA. The ceremonial presentation of the award will take place on September 23, 2016 in New York.

Bartenschlager developed a cell culture system in the 1990s which allows replicating minigenomes of the hepatitis C virus called replicons in human liver cell lines. In 2005, his group managed to produce a complete reproductive Hepatitis C virus in cell culture. This paved the way for investigating their cycle of propagation and for developing targeted effective medicines. The first drug against hepatitis C was approved in 2014, it results in a complete cure of the infection in 95% of patients.

**Liver cancer as a result of hepatitis C infection**

At the DKFZ, Bartenschlager and his division of Virus-associated Carcinogenesis investigate the causative molecular processes leading to chronic viral hepatitis, and ultimately carcinoma. Their main research focus is on liver tumors - one of the most common and deadly tumors worldwide: The World Health Organization (WHO) refers to approx. 782,000 new cases per year, which makes liver cancer the fifth most common malignant tumor, and the second most common cause of death with 746,000 deaths annually. Every year around 8000 people in Germany develop liver cancer, and nearly the same number die from it. Around half of the cases is preceded by an infection with hepatitis B or C viruses. “This is medically highly relevant” explains Bartenschlager “as around 300 million people worldwide are chronically infected with the hepatitis C virus, in Germany we have around 400,000 cases. Chronically infected means that the virus permanently settles in the liver cells, which can cause cirrhosis and cancer of the liver.”

The probability of chronic infection turning into a liver tumor is increased by metabolic disorders, alcohol abuse and chronic infections. As liver tumors can only currently be treated to a limited extent, there is an urgent need for improved therapeutic concepts and sensitive diagnostic methods. “We are therefore looking closely at how the virus manages to evade the immune system and to permanently install itself. We are also trying to understand the

molecular tricks the virus uses to cause the chronically infected liver cells to degenerate, and which role the additional risk factors play in this process."

**Infections are responsible for 20% of cancer cases worldwide**

Michael Boutros, Acting Scientific Director of the DKFZ declares: "We are delighted for Ralf Bartenschlager. The Lasker Award is a tremendous recognition of his pioneering research in the field of hepatitis. We are proud to have Ralf Bartenschlager as coordinator for our Infection, Inflammation and Cancer research program. Harald zur Hausen as long-standing Scientific Director of the DKFZ built up this important area of cancer research in the 1980s, and received the Nobel Prize for Medicine for his discovery that the human papilloma virus triggers cervical cancer.

"This is the second time that an important award has gone to a scientist in this research area at the DKFZ", Boutros is pleased to add. Beside the hepatitis C and B viruses, DKFZ scientists in this research program are investigating several other carcinogenic viruses such as the Human papilloma virus, or the Epstein-Barr virus. Around 20% of cancer cases worldwide are preceded by infections with bacteria, viruses and parasites. Another research subject at the DKFZ is oncolytic viruses such as parvoviruses, that specifically target and kill cancer cells.

Harald zur Hausen also gave his congratulations: "The work of Ralf Bartenschlager clearly demonstrates the importance of basic research in medicine. His research has made it possible for us to understand the basic mechanisms of the hepatitis C virus, and has facilitated the development of effective therapies that in most cases eliminate the virus, and thereby prevent one of the most frequent causes of cancer-related death."

**Background:**

Ralf Bartenschlager studied biology at Heidelberg University. Following his degree in 1987 and his PhD in 1990 at the Centre for Molecular Biology in Heidelberg (ZMBH), he worked as a postdoc at the Hoffmann-La Roche in Basel, Switzerland. Here, he started his scientific work on the hepatitis C virus (HCV). Back in Germany, he habilitated in virology at Mainz University and was appointed Professor for Molecular Virology in 2000. In 2002, he received an endowed Chica and Heinz Schaller Professorship for Molecular Virology at Heidelberg University.

He has since been Director of the Molecular Virology section at the Heidelberg Department of Infectiology. Since early 2014, he has also headed the Division of Virus-associated Carcinogenesis at the German Cancer Research Center (DKFZ), and coordinates its "Infection, Inflammation and Cancer" Research Program.

Bartenschlager received the Lautenschläger Prize in 2013, and the Robert-Koch Prize in 2015. Since 2013, he has been a member of the German Academy of Sciences Leopoldina. Bartenschlager is only the third German scientist ever to receive the Lasker-DeBakey Award for clinical and medical research.

Mary Lasker was an influential US-American activist and lobbyist in the health and medical research sector. Together with her husband she founded the Albert-Lasker Foundation in 1945 and played an important role ensuring that more funds were invested in medical research. Having lost her husband to cancer in 1952, the battle against cancer became a primary concern. She was consequently the most prominent advocate for the National Cancer Act in 1971, which initiated the "War on Cancer" in the USA and significantly increased the budget for the US-American national Cancer Institute.

For photos and further information about Ralf Bartenschlager please go to:
http://www.dkfz.de/de/presse/bartenschlager/bilder/DKFZ-Bartenschlager.jpg

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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