

P R E S S R E L E A S E

LOUIS-JEANTET PRIZE FOR MEDICINE 2007

THE LOUIS-JEANTET PRIZE FOR MEDICINE 2007 is awarded to Venki RAMAKRISHNAN, a researcher with the Medical Research Council's Laboratory of Molecular Biology in Cambridge, and to Stephen WEST, a researcher with Cancer Research UK's London Research Institute, at Clare Hall Laboratories, in South Mimms. **THE LOUIS-JEANTET FOUNDATION** awards to each of the prize-winners the sum of €400,000 to pursue their research and the sum of €75,000 for personal use. **THE AWARDS CEREMONY FOR THE PRIZES** will be held at Geneva (Switzerland) on Friday, April 27th, 2007.

VENKI RAMAKRISHNAN receives the **Louis-Jeantet Prize for Medicine 2007** for his research on the ribosome. He has obtained three-dimensional images of the atomic structure of this particle, which is of interest for several reasons. An essential component of the "cellular machinery", the ribosome also plays an important role at the therapeutic level, as it is one of the main targets of antibiotics. The studies carried out by Venki RAMAKRISHNAN are therefore crucial at a time when bacterial resistance to these drugs has become a major public health concern. Venki RAMAKRISHNAN will use the Prize to pursue his work, which should lead to an improved specificity of certain classes of antibiotics and perhaps to the development of new ones.

STEPHEN WEST receives the **Louis-Jeantet Prize for Medicine 2007** for his pioneering work on DNA repair mechanisms. He has shown how these processes, when defective, influence the development of certain human diseases, in particular, hereditary breast cancers and certain neurological diseases. Stephen WEST has identified and characterised the molecules involved in these processes and in the genesis of these diseases. Stephen WEST will use the Prize to continue his study of these molecules, which represent new therapeutic targets in the areas of oncology and neurodegenerative diseases.

VENKI RAMAKRISHNAN

The biologist Venki RAMAKRISHNAN, was born in India and is an American citizen. He has worked in the UK since 1999 and is currently the joint Head of the Structural Studies Division at the Medical Research Council's Laboratory of Molecular Biology in Cambridge. He is a Fellow of the Royal Society and of the US National Academy of Sciences and a member of the European Molecular Biology Organisation.

Studies on the ribosome and therapeutic prospects

Found within cells, the ribosomes are factories for the production for proteins, which are essential for all living organisms to function.

Appearing very early during the evolution of species, ribosomes are present in both micro-organisms and human cells, but in slightly different forms. These differences are exploited by antibiotics, which block bacterial ribosomes without affecting their human counterparts.

Venki RAMAKRISHNAN and his team have obtained images of the atomic structure of the ribosome, i.e. how its atoms are arranged in space. This allowed them to obtain detailed knowledge of the mechanisms of protein translation and, more specifically, to identify the sites where antibiotics bind. They were thus able to obtain a better understanding of how these drugs affect the activity of the ribosome.

This highly basic research is also of great practical importance for medicine. Better targeting of the bacterial ribosome should make it possible to avoid effects on the human ribosome and thus to decrease the secondary effects linked to antibiotic use. It should also make it possible to combat the development of bacterial resistance (for example, resistance to anti-tuberculosis drugs).

A more detailed description of the research studies of Venki RAMAKRISHNAN is available on request from the Louis-Jeantet Foundation: info@jeantet.ch.

STEPHEN WEST

The biochemist, Stephen WEST, is a British citizen. He is a Senior Group Leader with Cancer Research UK's London Research Institute, at Clare Hall Laboratories in South Mimms, where he directs a research group specialised in the study of DNA repair mechanisms. A Fellow of the Royal Society and of the Academy of Medical Sciences and a member of the European Molecular Biology Organisation, he was also awarded the Swiss Bridge Prize Award for Cancer Research in 2002.

Studies on DNA repair and therapeutic prospects

Stephen WEST has devoted most of his career to the study of enzymes involved in the repair of broken chromosomes. During the 1990s, scientists identified two genes, *BRCA1* and *BRCA2*, defects in which predispose women to develop breast or ovarian cancer. Stephen WEST carried out pioneering work establishing the link between the action of these genes and DNA repair mechanisms, the processes which make it possible to repair our genome when it is damaged by X-rays, solar UV or certain chemical products.

Stephen WEST demonstrated that the protein BRCA2, the "product" of the gene of the same name, controls another genome-guarding protein, RAD51, and helps it to carry out its work of "mending" broken strands of DNA by telling it where and when to intervene. His work showed that, when BRCA2 is defective, repair cannot be carried out correctly.

These studies should have interesting therapeutic consequences, as a better knowledge of DNA repair mechanisms may make intervention possible. If we were able to block these repair processes in cancer cells, it should be possible to make tumours more sensitive to radiotherapy and to new chemotherapeutic treatments.

Stephen WEST has also studied the link between DNA repair systems and other hereditary diseases, in particular Ataxia with Oculomotor Apraxia, a neurological disease seen from childhood and characterised by an unstable gait and difficulty in moving the eyes. With the award, he also intends to study Fanconi's anaemia, another rare hereditary disease associated with a predisposition to cancers and genetic instability.

A more detailed description of the research studies of Stephen WEST is available on request from the Louis-Jeantet Foundation: info@jeantet.ch.

THE LOUIS-JEANTET PRIZE FOR MEDICINE

Each year, the Louis-Jeantet Prize for Medicine is awarded to scientists who have distinguished themselves in biomedical research in Europe. It is intended to encourage the pursuit of high-value research in the laboratories of the prize-winners.

Candidates for the Louis-Jeantet Prize for Medicine must carry out their research in one of the member countries of the Council of Europe, but need not be a citizen of these countries.

Since its establishment in 1986, the Louis-Jeantet Prize for Medicine has been awarded to 64 researchers working in Europe, of which 21 work in Great Britain, 12 in Switzerland, 10 in Germany, 10 in France, 3 in Holland, 3 in Sweden, 2 in Belgium, 2 in Finland and 1 in Austria.

Since 1986, the Foundation has awarded approximately 27 million euros to the 64 prize winners to pursue their research.

THE LOUIS-JEANTET FOUNDATION FOR MEDICINE

The Louis-Jeantet Foundation for Medicine was created in 1982 at the bequest of Louis Jeantet, a French businessman, who died in Geneva (Switzerland) in 1981. It is based in Geneva and started operations in 1983.

In addition to the annual awarding of the Louis-Jeantet Prize for Medicine, the Foundation encourages the development of teaching and research in the Faculty of Medicine of the University of Geneva, mainly by the creation and funding of posts of professorial rank and their infrastructure.

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