SYBILLA
SYSTEMS BIOLOGY OF T-CELL ACTIVATION

SEVENTH FRAMEWORK PROGRAMME

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NEWSLETTER

For the general public:

The immune system is one of the largest organs of the human body. It is responsible for fighting off any kind of invader, such as bacteria or viruses, but also cancer cells. Following recognition by the immune system these disease-causing microbes are destroyed. This is normally done in a very precise way in which normal uninfected tissues are not affected by the immune attack. However, in certain situations, "friendly fire" from the immune system will lead to collateral damage of normal tissue. This may lead to autoimmune diseases, such as multiple sclerosis, insulin dependent diabetes or psoriasis. The main cells of the immune system that cause these effects are called T-cells, a special lymphocyte. It is not known how a T cell makes the important decision to attack – or not, and why it sometimes gets it wrong.

The SYBILLA project - "Systems Biology of T-cell activation in health and disease" - is a multidisciplinary consortium of 17 scientific and industrial partners that is funded by the European Union for 5 years with 11.1 mio Euro. Dr. Wolfgang Schamel from the Max-Planck-Institute for Immunobiology in Freiburg, Germany, is the coordinator of this large collaborative project. 14 partners are from Europe and 3 are from the USA and India. Each partner contributes particular expertise, including molecular biology, genetics, biochemistry, mathematical modelling and medicine. Joining them in a common effort, SYBILLA aims to unravel the complex molecular mechanisms that determine whether, and how, T-cells become activated by a pathogen, or, as in autoimmune disease, by cells from our own tissues. The hypotheses that will be generated will be tested in the autoimmune disease multiple sclerosis. The novel knowledge will aid in the development of drugs that might be used in the treatment of autoimmune diseases.

More information can be found at www.SYBILLA-t-cell.de