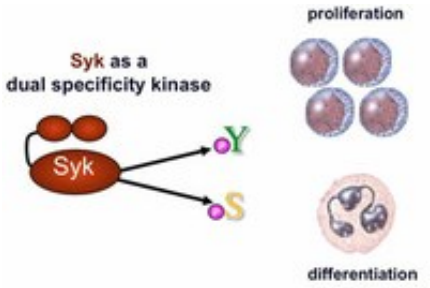
Great Honor for Researchers of the Cluster of Excellence BIOSS

Journal Science Signaling Ranks Publication Among "Signaling Breakthroughs of the Year 2010"

Freiburg, 25.02.2011



The definition of the important signaler syk as a dual-specific kinase which self-regulates the signaling of the B cell antigen receptor (BCR) is a first in signaling research / source: BIOSS

An article by Dr. **Simona Infantino**, Dr. **Beate Heizmann**, and Prof. Dr. **Michael Reth** of the University of Freiburg and the Max Planck Institute of Immunobiology and Epigenetics published in the science magazine *PNAS* was selected by *Science Signaling*, a renowned scientific journal, as one of the signaling breakthroughs of the past year. Publications nominated for this honor by the journal's editorial staff describe new scientific findings attained through comprehensive system analyses and the study of protein structures as well as new discoveries in metabolism and genetics research. In addition, the selected breakthroughs also include findings which could lead to new approaches for the therapy of cancer, diabetes, and Alzheimer's disease.

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The Freiburg researchers brought to light the dual function of the enzyme syk (spleen tyrosine kinase) and thus succeeded in solving a part of the conundrum syk has presented for research. They discovered the dual activity of this kinase, which is possibly connected to the different ways in which it can function in tumors. The gene for syk is one of the most frequently mutated genes in human tumor cells. The definition of a dual-specificity kinase which independently regulates the signal output of the B cell antigen receptor (BCR) marks a first in signaling research.

Heizmann et al. tackled this problem with the help of an approach from synthetic biology. They implemented a method developed by BIOSS for their research: the reconstruction of the BCR of a mammal and its signaling elements in a cell of the fruit fly drosophila. The new state of research could have substantial impact on the understanding and treatment of human tumor diseases.

Publication in *PNAS*:
"Syk is a dual-specificity kinase that self-regulates the signal output from the B-cell antigen receptor," Beate Heizmann, Michael Reth, Simona Infantino
26 October 2010
PNAS, 26 October 2010. Vol. 107, no. 43, p. 18563–18568. DOI: 10.1073/pnas.1009048107

Science Signaling:
2010: Signaling Breakthroughs of the Year
4 January 2011
Sci. Signal., 4 January 2011. Vol. 4, Issue 154, p. eg1. DOI: 10.1126/scisignal.2001770

German Press Release

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