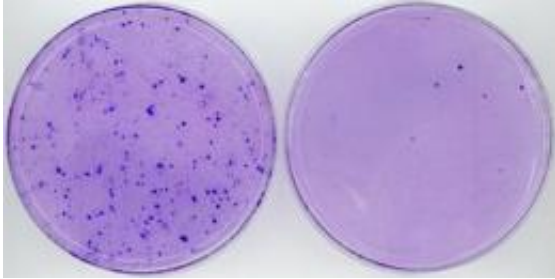


Cancer: Another step towards medication

March 18 2009



Oncogen Myc induces cell transformation (left), tumor suppressor BASP1 inhibits Myc induced cell transformation (right). Credit: University of Innsbruck

The Myc-gene plays an important role in cell regulation; in about 50 percent of all tumors this gene is mutated. Scientists led by Professor Klaus Bister of the University of Innsbruck, Austria have shown that the gene BASP1 specifically inhibits the effect of this oncogene, thereby preventing uncontrolled cell growth which is typical for tumors. The biochemists have just published their findings in the renowned journal *Proceedings of the National Academy of Sciences*.

The gene Myc is an important factor for the growth of organisms by cell division. It causes the production of a protein which, as a transcription factor, controls the expression of up to 15 % of all human [genes](#). When this gene mutates to an [oncogene](#), the cell proliferates excessively and apoptosis is inhibited. Thereby the gene plays a decisive role in the development of many tumors. The problem is that pharmacological substances do not target Myc as it does not have enzymatic activity of its

own. Thus, scientists worldwide are trying to find alternative ways to inhibit this oncogene. A team of scientists led by Klaus Bister and Markus Hartl of the Institute of Biochemistry and the Centre for Molecular Biosciences of the University of Innsbruck may have made an important step towards achieving this goal.

For the first time, the scientists have shown that Myc suppresses the expression of the gene BASP1. This evidence prompted them to test the effect of BASP1 on the oncogene. In cell experiments they proved that BASP1 specifically inhibits the uncontrolled proliferation of Myc.

"Until now the precise biochemical function of BASP1 is unknown", Professor Bister explains. "However, in our experiments we have found clear evidence that Myc-induced [cell transformation](#) can be specifically inhibited by BASP1, and consequently, the [gene functions](#) as a [tumor](#) suppressor." This finding may facilitate the development of new drugs which keep the development of tumors under control.

Source: University of Innsbruck

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