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The Week in Germany: Business and Technology

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Freiburg scientists discover aging gene

It's not the fountain of youth, but it's one step further to understanding the most basic of life processes. The scientific publication *Developmental Cell* reports that researchers at the University of Freiburg have discovered a gene key to regulating aging.

Professors Maren Hertweck and Ralf Baumeister from the Institute for Biology at the Albert Ludwigs University in Freiburg have isolated a gene in a tiny flatworm that steers the aging process by building an enzyme controlled by insulin. By manipulating this gene, through mutation or with the influence of stress or chemical substances, Hertweck and Baumeister discovered that a worm's age increases by more than two thirds of its lifespan. "The worms usually live just 14 days, and in the last third part of their lives, they exhibit typical characteristics of their age," said Baumeister. "The worms with a manipulated gene are still as agile as young worms after two weeks."



The importance of insulin in the aging process has been known for over a decade, but a feverish race has been on to isolate the responsible gene.

The flatworm *C. elegans*, a simple earthworm, has become a prime research tool in the study of age-related diseases such as diabetes and cancer. It is estimated that 60% of the worm's genes are related to that of humans.

"There is a lot of information that supports the belief that the worm gene functions similarly to the human gene," said Baumeister.

But Hertweck and Baumeister are less interested in eventually prolonging life than in using their discovery to further the study of diseases related to aging. "The probability of dying of heart disease or cancer or nervous system disorders increases dramatically with age. We can only develop treatments to combat these diseases when we understand how and why a cell or an organism ages," argues Baumeister.

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