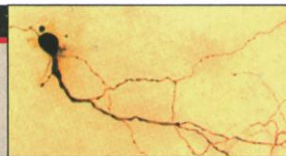


Terrorism
leaves its mark
on 2003 budget



Regulators
of the body's
clock



Profile:
Vera Rubin



"I'm sure this thing will take off," says Froidevaux. "I really hope so. I really hope so." So does Church. "I'll worry in 6 months if we haven't made significant progress," he says. "If by summer we're still struggling, I don't know." —CHARLES SEIFE

STEM CELLS

German Researchers Get Green Light, Just

BERLIN AND BONN—German scientists are thankful for small mercies after their country's parliament last week approved some of the world's strictest regulations covering work with human embryonic stem (ES) cells.

The new measure, approved on 30 January, prohibits scientists in Germany from deriving human ES cell lines and "fundamentally bans" the import of these controversial cells. However, the Bundestag left an opening: Researchers can import ES cells if they can demonstrate that there are no feasible alternative ways to conduct the research. But even that comes with a catch: No imports can be approved until the Bundestag passes a new law establishing a national commission to review all import proposals, and the soonest such a commission could be in place is early summer.

Still, researchers are looking on the bright side. "This is a positive signal to scientists, biomedical research, and in the end also to patients," says developmental neuroscientist Oliver Brüstle of the University of Bonn, although he had hoped for a less restrictive vote. "It is the best we could hope for under the circumstances," agreed Rüdiger Wolfrum, a law professor at the University of Heidelberg and vice president of the DFG science funding agency.

Many scientists hope human ES cells, which can in theory transform into any of the body's cell types, might someday produce treatments for dread diseases such as Parkinson's or diabetes. But the cells have stirred controversy because they are derived from week-old human embryos. In Ger-

many, scientists and politicians have argued that the country's embryo protection law, which forbids research on human embryos, does not bar work with stem cell lines that were derived outside the country. Debate on the issue has raged for more than a year, ever since Brüstle proposed importing human ES cell lines from Israel (*Science*, 14 December 2001, p. 2262).

For four and a half hours, Bundestag members debated three proposals, ranging from a complete ban on any import of human ES cells to few import restrictions. The winning compromise follows a formula established by President George W. Bush in August, when he permitted U.S. government-funded researchers to use only cell lines that had already been established (*Science*, 17 August 2001, p. 1242); German researchers will be allowed to import only cell lines established before last week's vote. "Killing of embryos for research purposes must remain illegal," argued Maria Böhmer of the Chris-



The art of compromise. German Bundestag members vote to allow restricted import of human embryonic stem cells.

tian Democratic Union, one of the co-authors of the winning motion. But "we cannot cancel" the fact that embryos were already killed for existing cell lines, she said.

Legislators on all sides of the debate called for generous funding for research into alternatives to ES cells, including stem cells derived from umbilical cord blood and adult tissues.

A day after the Bundestag vote, DFG announced that it would fund Brüstle's work as soon as the national commission is in place to give its stamp of approval. DFG had agreed several times to delay its funding decision until the Bundestag had debated the issue. Asked whether he regretted waiting,

DFG president Ernst-Ludwig Winnacker said the result of the debate "shows that it was right to be patient and cautious in this sensitive field. Freedom of research [enshrined in Germany's constitution] is not absolute but is restricted by other rights."

Bundestag leaders have said they hope to have a draft of a new law ready in a few weeks, with final passage possible in a few months. But several scientists warn that this will not be the end of the debate in Germany. Molecular biologist Detlev Ganten of the Max Delbrück Center for Molecular Medicine in Berlin-Buch, a member of the National Ethics Council, said he will push for a review of the embryo protection law after national elections in September. "The discussion will not end here," he says. "From my point of view, import is a step in the right direction, but it leaves a double standard in place." For now, it seems to be a double standard that a majority of German lawmakers can agree on.

—GRETCHEN VOGEL

With reporting by Sabine Steghaus-Kovac in Bonn.

CANCER RESEARCH

Leukemia Protein Spurs Gene Silencing

Researchers have identified hundreds of genes that can, when mutated, cause uncontrolled cellular growth and other changes that underlie cancer. But in the past few years, increasing evidence has suggested that mutations aren't the only genetic changes that lead to cancer. The addition of certain chemical groups to genes or their associated proteins can also alter gene activity patterns in ways that result in malignancy, without disrupting gene structures. Exactly how cancer-related genes acquire these so-called "epigenetic" alterations hasn't been clear, however.

Now, a team led by Luciano Di Croce and Pier Giuseppe Pelicci of the European Institute of Oncology in Milan, Italy, provides a possible answer for a blood cancer known as acute promyelocytic leukemia (APL). On page 1079, they report that a mutant oncogenic protein involved in APL development recruits enzymes that attach methyl groups to DNA, in this case to a possible tumor suppressor gene called RAR β 2. The addition of these methyl groups silences the gene, and that in turn contributes to the malignant transformation of the leukemia cells, the researchers report.

This finding could lead to better APL