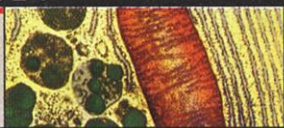


Are mitochondria master killers?



Q&A with Germany's research minister



Garbage in, science out



NIH officials declined to comment, saying only that they are working on the report.

Back in the Twin Cities, meanwhile, the University of Minnesota is holding firm. Christine Maziar, vice president for research, says the university "applauds" Glaxo's plans to reduce the cost of other drugs and "would welcome" a price reduction of Ziagen in sub-Saharan Africa, "despite a potential reduction in royalties." But the university will not abandon its intellectual property: "As a public institution, we are not able to give away a public asset," Maziar says about the patent on Ziagen. "If a farmer were to donate land, we wouldn't be able to give that away, either."

Amanda Swarr, a graduate student in women's studies at Minnesota and leader of the Ziagen protest, argues that "negligible" revenues are at stake in Africa. Besides, she says, "the university needs to put people's lives over patents."

Vince says he's trying to do exactly that by putting his share of the Ziagen money to work on three potential new AIDS drugs and a drug design center. Those dreams, however, rest on the expected royalties from university-owned patents. —ELIOT MARSHALL

AIDS ORIGINS

Disputed AIDS Theory Dies Its Final Death

At an unusual Royal Society meeting in London last September, a controversial theory that a contaminated polio vaccine triggered the AIDS epidemic was all but pronounced dead. Now, a paper in this issue (see p. 743) and three more in this week's issue of *Nature* collectively declare that—to paraphrase the Munchkin coroner in *The Wizard of Oz*—the theory is not only merely dead, it's really most sincerely dead.

The Royal Society meeting (*Science*, 15 September 2000, p. 1850) and these new studies are a response to a hotly debated 1999 book, *The River*. In it, British writer Edward Hooper links the first known cases of AIDS to tests of an oral polio vaccine in 1 million Africans more than 40 years ago. Hooper contends that in the manufacturing process, scientists accidentally introduced a precursor of HIV, a chimpanzee virus known as SIVcpz, into the vaccine. Specifically, Hooper asserts that the scientists grew the poliovirus vaccine in cells taken from chimps infected with SIVcpz. The

scientists, led by Hilary Koprowski, former director of the Wistar Institute in Philadelphia, denied the charge, asserting that they grew the vaccine virus in monkey, not chimp, cells. They further contended that no evidence supported the notion that SIVcpz or HIV had contaminated any batches of the vaccine.

Preliminary data presented at the Royal Society meeting challenged each of Hooper's main claims, and these four new papers now formally dismiss them. Three of the four papers—including the one in this issue by Hendrik Poinar and colleagues at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany—examined old samples of Koprowski's vaccine and found that none contained DNA from chimpanzee cells. Each lab also found evidence of monkey DNA. Two of the labs further looked for genetic material from HIV or SIVcpz but found none.

The fourth paper, by evolutionary biologist Edward Holmes and co-workers at Oxford University, analyzed an altogether different contention made by Hooper: that the odd shape of the evolutionary tree formed by different strains of HIV supports the contaminated polio vaccine theory. Hooper highlighted the fact that the various subtypes of HIV seemed to appear simultaneously, forming clusters called "starbursts"; these theoretically could have occurred if this massive human trial used an SIVcpz-contaminated vaccine. In Hooper's hypothetical scenario, the vaccine would have contained a range of viral subtypes, which either existed in one chimp or came together when scientists pooled cells from several chimps.

By studying 197 HIV isolates obtained in 1997 in the Congo—where the bulk of these polio vaccine tests took place—Holmes and co-workers found that the HIV tree does not show the distinctive subtypes that are seen in previously constructed trees from the entire world. "The starburst is no longer there," says Holmes. Rather than all of the subtypes originating first in chimps, these data suggest that the sub-

types evolved in humans. "A set of people want HIV and AIDS to be a unique thing—it's so unexplainable that they think that somebody must be responsible," says Holmes. "But it's actually like any other virus. It differs in that what it does to us is



Most sincerely dead. Like the Wicked Witch of the East, the theory that AIDS was spread by a polio vaccine has been discounted.

so horrendous." (Hooper did not respond to an interview request.)

To Holmes, these studies have, in the absence of new evidence, thoroughly dismissed Hooper's theory. "Hooper's evidence was always flimsy, and now it's untenable," says Holmes. "It's time to move on."

—JON COHEN

DEVELOPMENTAL BIOLOGY

Stem Cells Are Coaxed To Produce Insulin

In a boost for scientists who hope to turn the potential of undifferentiated stem cells into medical miracles, researchers have found a way to produce insulin-producing cells from mouse embryonic stem (ES) cells.

There is ready-made demand for anyone who can achieve such alchemy in human cells: millions of patients with diabetes. Doctors have reported promising results in transplanting pancreatic cells from cadavers into diabetic patients, enabling a handful of recipients to stop insulin injections indefinitely. But the demand for cells is far greater than the supply. An unlimited source of cells that can produce insulin in response to the body's cues would thus be a hot commodity.

But although scientists have transformed ES cells into a range of cell types