in 1981, and it generally does not take 15 years to get tenure.

Mark E. Siddall
Museum of Zoology, University of Michigan, Ann Arbor, MI 48109, USA. E-mail: msiddall@umich.edu

Virulent HIV Strains, Chimpanzees, and Trial Vaccines

We would like to comment on the controversy concerning the use of a virulent strain of human immunodeficiency virus (HIV) to assess the protective efficacy of candidate HIV vaccines (A. M. Prince and L. Andrus, Letters, *Science*'s Compass, 18 Dec., p. 2195; N. L. Letvin, *ibid.*). We believe that this must be viewed from both scientific and ethical perspectives.

The controversy stems from the report of a chimpanzee that developed an AIDS-like syndrome 10 years after infection with various laboratory isolates of HIV and which was euthanized in 1996 (*1*). Inoculation of 40 milliliters of blood from this chimpanzee to a second animal resulted in an extremely high acute viremia (>10^7 HIV RNA molecules per milliliter of plasma) and a rapid depletion of $CD4^+$ cells within 14 weeks after infection. The virulence of the primary infection in this animal is not representative of most primary infections in humans. Acute viremia in humans is characteristically 10- to 100-fold lower, and $CD4^+$ cell depletion does not occur until several years after infection. Use of a challenge virus having unusual virulence could seriously jeopardize the HIV vaccine effort, because protection against such viruses could be missed with vaccines that effectively protect against less virulent wild-type HIV.

Suitable challenge viruses for vaccine evaluation should have virulence characteristics similar to those of wild-type viruses that infect humans. They should also ideally be primary isolates grown only on peripheral blood lymphocytes because of the relative resistance of such viruses to antibody-mediated neutralization. An expanded stock of the HIV-1_{Han2} isolate was recently developed by Program EVA (European Vaccine Against AIDS) to fulfill these requirements (*2*). This clade-B primary isolate exhibits growth characteristics in chimpanzees similar to those seen in humans. It reliably infects chimpanzees using small challenge inocula (10 to 100–tissue-culture infectious doses) and maintains a detectable chronic viremia similar to that obtained with the laboratory isolate HIV-1_{Lai}. It does not cause AIDS rapidly, if at all.

From an ethical perspective, our concerns about the use of virulent HIV strains stem to a large extent from precedents set in the field of simian immunodeficiency virus (SIV)/SHIV (a genetically engineered hybrid virus with an HIV envelope and an SIV core) research in monkeys. Pathogenic SIV strains have emerged that have subsequently been passaged through monkeys to develop isolates with increased virulence for that species and which cause death within weeks after infection. We point out that euthanasia of chimpanzees (our nearest relative) is universally condemned. The development of virulent HIV strains that cause AIDS in a short time would necessitate euthanasia and should be opposed on that ground alone.

We urge those who carry out vaccine research in the chimpanzee model to seriously question the use of virulent HIV challenge inocula from both a scientific and an ethical standpoint.

Alfred M. Prince Laboratory of Virology, New York Blood Center, 310 East 67 Street, New York, 10021, USA. E-mail: aprince@nybc.org; **Jonathan Allan**, Southwest Foundation for Biomedical Research, San Antonio, TX 78228, USA; **Linda Andrus**, New York Blood Center; **Betsy Brotman**, Vilab II, Liberian Institute for Biomedical Research, Robertsfield, Liberia; **Jorg Eichberg**, Editor-in-Chief,

Journal of Medical Primatology, Austin, TX 78758, USA; **Roger Fouts**, Chimpanzee and Human Communication Institute, Central Washington University, Ellensburg, WA 98926–7573, USA; **Jane Goodall**, Jane Goodall Institute for Wildlife Research, Education, and Conservation, Silver Spring, MD 20911–4890, USA; **Preston Marx**, Tulane Regional Primate Research Center, Department of Tropical Medicine, Tulane University Medical Center, and Aaron Diamond AIDS Research Center, Covington, LA 70433, USA; **Krishna K. Murthy**, Southwest Foundation for Biomedical Research; **Shirley McGreal**, International Primate Protection League, Summerville, SC 29484, USA; **Carole Noon**, Chimpanzee Sanctuary, Center for Captive Chimpanzee Care, Boynton Beach, FL 33462, USA

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1. F. J. Novembre *et al.*, *J. Virol.* **71**, 4086 (1997).
2. W. J. Bogers *et al.*, *J. Gen. Virol.* **79**, 2895 (1998).

Coping with the DAS in *Science*

For over 30 years, I have been a regular reader of *Science* and have finally decided to protest against the DAS (dreaded abbreviation syndrome) I meet in so many articles. Like many equally busy colleagues in the sciences, I first scan (FS) an article in the following order: title, abstract, first paragraph (FP), bold-type headings (BTH), figures and captions (FC), and last paragraph (LP), with a few glances at the body of the article (BA) to see if something catches my eye. If this quick perusal (QP) reveals anything of possible interest, I read the article more completely.

In a recent issue (4 Dec., p. 1858), the following BTH caught my eye: "The LGS and deglaciation." I did not immediately remember what LGS means and had to search clear back to the abstract to decode it. A few lines down, I read about concentrations of Cl^- and NO_3^- in the LGM. It's fair enough to expect me to know the abbreviations in the PT (periodic table) if I'm reading *Science*, no matter what my specialty. However, as I read on in the BA, I stumbled on the DCR, the YD, and the GISP. This was a geology-related article, close to my own field, and I began to feel annoyed that the DAS had forced me to jump out of my normal QP to read back several paragraphs in search of the meanings of those abbreviations. Likewise, the FC sent me back through the text to decode them.

Wondering if this were a special problem of GRA, I looked through articles in several other fields. There, too, my attempts at QP stumbled against the DAS. We talk a lot about scientific literacy (SL) these days, and yet we seem to accept the DAS problem, with specialists continuing to communicate with their fellow specialists in obscure codes. *Science*, as an interdisciplinary journal, ought to set a better example by communicating in good, solid, plain English as much as possible. If it's that important to save a few lines of space, a possible solution would be to have the first footnote of each article list all of the abbreviations.

William D. Romey
Post Office Box 294, East Orleans, MA, USA

Kaposi's Sarcoma: Correction

In my Perspective "The enigmas of Kaposi's sarcoma" (*Science*'s Compass, 4 Dec., p. 1837), I described some special conditions needed for the growth of human herpes virus–8 (HHV-8)–infected endothelial cells described in the important paper by E. Cesarman and her colleagues (*1*). In the description, I stated that a 40% serum concentration was needed. However, a careful reading of the methods in that paper indicates that the serum was diluted twofold and that only 20% serum volume per volume was used, which is not inordinately high. Indeed, the results from this group clearly demonstrate that HHV-8 (KSHV) can, under some circumstances, promote long-term survival of some infected endothelial cells.

Robert C. Gallo
Director, Institute of Human Virology, University of Maryland, Baltimore, MD 21201, USA. E-mail: ihvinfo@umbi.umd.edu

References

1. O. Flore *et al.*, *Nature* **394**, 588 (1998).

CORRECTIONS AND CLARIFICATIONS

In the Random Samples item "Locked but not knotted" (12 Feb., p. 931), the name of Heather Johnston of Rutgers University, coauthor of the paper "Nontrivial embeddings of polygonal intervals and unknots in 3-space", which will appear in the *Journal of Knot Theory and Its Ramifications*, was omitted.

The map (p. 23) accompanying Robert Koenig's News Focus article "Eastern Europe's research gamble" (1 Jan., p. 22) should have been color coded so that Sicily, Sardinia, Corsica, Ibiza, Majorca, Minorca, Crete, the Peloponnese peninsula and Euboea in Greece, the Danish islands of Fyn and Sjælland, and Northern Ireland were included as full members of the European Union.

In the report "Immunotherapy of tumors with autologous tumor-derived heat shock protein preparations" by Y. Tamura *et al.* (3 Oct. 1997, p. 117), the right panel of figure 3B (p. 119) was incorrect. The correct figure appears below.