their offspring (*7*), in protection of female sex workers (*8*), and in inhibition of HIV in adults (*9*, *10*). The most consistent protection against SIV infection in macaques has been immunization with inactivated SIV grown in human CD4$^+$ T cell lines in which the HLA antigens elicit effective immunity to SIV (*4*).

About 1% of the Caucasian population has a homozygous 32–base pair deletion of CCR5; these individuals do not express cell-surface CCR5 and, with very few exceptions, are completely resistant to HIV infection (*11*). An HIV-CCR5 vaccine strategy may have a dual effect of targeting not only the virus but also its major receptor. Indeed, we have developed a macaque model based on targeting not only SIV envelope and core antigens but also CCR5, using the 70-kD heat shock protein (HSP70) as an adjuvant that generates the CC chemokines (CCL3, 4, and 5) and interleukin-12 (*5*, *12*). Preliminary results suggest that clearance or decrease in the viral load can be elicited by this immunization strategy and challenge with SHIV 89.6P (*13*).

Both of these alternative strategies of immunization are independent of HIV mutation and CTL escape. The mechanism of protection does not focus on either CTL or neutralizing antibodies, but on integrating the immune repertoire of innate and adaptive immunity.

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Envelope-Based HIV Vaccines

HIV RESEARCHERS EVERYWHERE ARE GRATEful to *Science* for featuring HIV in their 28 June issue to coincide with this year's AIDS Congress in Barcelona. However, there are two points in Jon Cohen's article "Monkey puzzles" (News Focus, p. 2325) that require further consideration.

First, the statement that "monkey studies with AIDS vaccines have completely failed to elicit antibodies that can neutralize the virus" (p. 2325) is not consistent with the published data. Many papers have shown the ability of envelope-based HIV vaccines to induce antibodies that neutralize T cell line–adapted virus isolates, although neutralization of primary CCR5-dependent HIV-1 isolates was rarely observed. In contrast, our papers clearly show that immunization of Rhesus macaques with a plasmid DNA vaccine prime followed by a recombinant oligomeric V2 loop–deleted SF162 envelope protein boost is capable of inducing serum antibodies that neutralize multiple primary isolates of HIV-1 that are both antigenically distinct and CCR5-dependent (*1*, *2*). To our knowledge, this was the first time that a vaccine-induced immune response was shown to be capable of broad primary isolate neutralization, and we are dismayed that this significant milestone in HIV vaccine research is overlooked by a review in a widely read journal.

Second, the table on p. 2326 ("AIDS Vaccine Pipeline") does not include vaccines in preclinical testing sponsored by the National Institute of Allergy and Infectious Diseases (NIAID) in collaboration with Wyeth Laboratories and Chiron Corporation (a version of the DNA prime-protein boost vaccine mentioned above). These IND-enabling preclinical studies are supported by the NIH HIV Vaccine Design and Development Team Contracts, which have been well publicized. We believe that underreporting the breadth and scope of NIAID's commitment to research and development of HIV vaccines does this important agency a great disservice.

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Response

THE PIPELINE TABLE SHOULD HAVE MADE clear that the list was not all-inclusive. The Chiron and Wyeth studies appear on a more comprehensive pipeline table that accompanied an article that I wrote for the 2 March 2001 issue ("AIDS vaccines show promise after years of frustration," News Focus, p. 1686). That article includes a prediction from Chiron that its vaccine would be in human trials in 2002 (which does not look likely now), and it describes the work in some detail. The assertion that antibodies have "completely failed" to neutralize the virus in monkey studies may be a bit of an overstatement, but not much, as is clear simply by look-

ing closely at the counterevidence Donnelly *et al.* present. First, they cite in vitro studies of antibodies from human HIV vaccine tests—which, if anything, underscore the difficulties antibodies have in stopping real-world isolates of the virus. Their own monkey data, from two animals, did not reach statistical significance, and, as far as I can tell, have not been independently replicated.

JON COHEN

CORRECTIONS AND CLARIFICATIONS

RESEARCH ARTICLE: "A comparison of whole-genome shotgun-derived mouse chromosome 16 and the human genome" by R. J. Mural *et al.* (31 May, p. 1661). The fifth affiliation was omitted. It is the Institute for Genomic Research, 9712 Medical Center Drive, Rockville, MD 20850, USA. Three additional authors should have been listed: Cynthia M. Pfannkoch, Mary Barnstead, and Lisa D. Stephenson. They are all at the first affiliation, Celera Genomics.

REPORTS: "Stability in real food webs: weak links in long loops" by A.-M. Neutel *et al.* (10 May, p. 1120). A minus sign was missing from an equation on lines 10 and 11 of reference 11. It should read "$F_{ij}^* = -c_{ij}X_i^*X_j^*$."

REPORTS: "Divergent regulation of dihydrofolate reductase between malaria parasite and human host" by K. Zhang and P. K. Rathod (19 April, p. 545). The affiliations were incorrect. The primary affiliation for both authors should have been the Department of Biology, The Catholic University of America, Washington, DC 20064, USA. Zhang is now at the Department of Molecular Microbiology, Washington University School of Medicine, St. Louis, MO 63110, USA, and Rathod is now at the Department of Chemistry, University of Washington, Seattle, WA 98195, USA, and the Seattle Biomedical Research Institute, Seattle, WA 98109, USA.

Letters to the Editor

Letters (~300 words) discuss material published in *Science* in the previous 6 months or issues of general interest. They can be submitted by e-mail (science_letters@aaas.org), the Web (www.letter2science.org), or regular mail (1200 New York Ave., NW, Washington, DC 20005, USA). *Letters are not acknowledged* upon receipt, nor are authors generally consulted before publication. Whether published in full or in part, letters are subject to editing for clarity and space.