Malaria vaccine research—setting the record straight

To the editor—Your *News* story "EC panel decision surprises malaria community" (*Nature Med.* **5**, 1333–1334; 1999) contained inaccuracies and its underlying message was political rather than scientific.

The story analyzed the science that was funded by the first round of the Fifth Framework programme that funds varied scientific research of the European Community and emphasized discussion of thevalidity of a particular vaccination strategy, transmission blockade. We feel it would have been more reasonable to point out that all malaria vaccine strategies based on recombinant technology have potential drawbacks. Unless a pre-erythrocytic formulation is 100% successful, the clinically dangerous blood-stage infection can result. Blood-stage vaccines must reduce the parasite burden sufficiently to substantially decrease pathology in the face of very high rates of re-infection with antigenically diverse parasites. Most scientists recognize that a combined approach that attacks the parasite on all fronts and all stages of its development is the most likely to succeed. All of these components have to be tested individually for safety and efficacy before combination.

The benefits and applicability of transmission-blocking vaccines are discussed elsewhere in this issue (see pages 241–244). However, in contrast to statements in the *News* article, effective vaccination of populations can be achieved with less-than-100% efficacy dependent upon geographical setting. Transmission-blocking vaccine candidates have completed Phase I clinical trials and will undergo field trials. Finally, in contrast to the impression created, the Arnot cluster is based on the development of a pipeline for clinical testing, including the expansion of sorely needed facilities for such evaluation in Europe.

It is true that the INCO-DEV program, concerned with European collaborative research with developing countries, has so far supported only one project concerned with malaria, but this is not a Concerted Action, as reported in the article. Instead, it is a full research proposal to genetically manipulate the parasite to reduce its pathogenicity and rate of proliferation and to generate auxotrophic parasites in uncontaminated blood-free culture. These molecular technologies will be developed in partnership with African laboratories and may ultimately lead to a return to the most basic form of vaccine of all—an attenuated parasite. An element of the program involves the promotion of debate in the malaria research community regarding such vaccines. Although this activity might lead to a future application for a Concerted Action, the present proposal dedicates only a small fraction of its budget to that activity.

Overall, your article creates an unrealistic and dangerous impression of jealous competition between European and American malaria researchers and of abdication of clinical testing in Europe. In fact, there is a great deal of cooperation between these two groups (the *Plasmodium falciparum* genome-sequencing project being an outstanding example) in areas including vaccine development, and both communities recognize that there is only one true competition, against the disease itself.

Malaria control, by whatever method, is an essential global health target for the next century. Accurate reporting of activities and initiatives combined with careful scientific consideration of strategies will better serve this goal.

ANDREW P. WATERS[1],
ROBERT SAUERWEIN[2] & DAVID ARNOT[3]

[1]*Department Of Parasitology,*
Leiden University Medical Centre, Post box 9600
2300RC, Leiden, The Netherlands
Email: Waters@lumc.nl
[2]*Department of Medical Microbiology,*
Division of Parasitology,
University Medical Centre, St. Radbout,
Nijmegen, The Netherlands,
Email: R.Sauerwein@mmb.azn.nl
[3]*Institute of Cell, Animal and Population Biology,*
University of Edinburgh,
West Mains Road, Edinburgh EH9 3JT., UK
Email: dea@holyrood.ed.ac.uk

Nature Medicine replies—We thank Waters *et al.* for their comments.

Your correction of our claim concerning 100% protection being required for transmission-blocking vaccines to be effective is well taken, and we thank you for pointing out that oversight.

In preparing the *News* story, many people in the malaria vaccine research community were interviewed, including Arnot and members of his research cluster. These interviews revealed that most scientists in this community were surprised that, in contrast to the US malaria research community, the European Commission decided not to support much of the proposed clinically advanced vaccine research. (Indeed, the most clinically applied section of Arnot's own cluster was dropped from the program line-up.) It was this apparent divide between US and European research that we stressed in the article.

Finally, we make no apology for the political slant of the story—for better or for worse, politics can affect science even more than science itself. As such, it is important for journals like *Nature Medicine* to report on political issues that shape the science and medical communities.