AIDS vaccine 'needs focused effort' as drug firms back off research

Paris. A world-wide consensus is emerging that the scientific community urgently needs to increase its efforts to develop an AIDS vaccine, partly to fill the gap left by the retreat of drug companies from pursuing this goal. Such a conclusion is being fuelled by the growing awareness that only a vaccine can curtail the explosion of AIDS in developing countries.

The need for a new, targeted vaccine strategy is, for example, expected to be the main thrust of a report on AIDS vaccine research at the US National Institutes of Health (NIH), to be released shortly by the agency's Office of AIDS Research (OAR) as part of a wider review by the office of AIDS research at the agency.

Broadly similar recommendations are thought likely to emerge from discussions of a 'task force' on vaccine research and development set up by the European commissioner for research, Edith Cresson.

The US report is widely expected to recommend that NIH should go beyond its traditional role of funding basic research and also become what Dani Bolognesi, from Duke University, the review's *rapporteur*, describes as a "discovery engine for the concepts for the design of the vaccine", aimed at bringing vaccines to the stage at which industry might regain interest.

"There is a sense that we have to do something radically different, with the major worry that otherwise companies will not become interested," says Bolognesi.

Moreover, while drug companies are traditionally reluctant to invest in any form of vaccine development — which carries high costs, low profits and big risks of costly legal suits should accidents occur — their current analysis of the state of AIDS vaccine research is particularly bleak.

"The traditional methods of vaccine development don't work with HIV," says one spokesperson at Glaxo-Wellcome. "It's back to the [research] drawing board." Similarly, Maurice Hilleman, a director of the Merck Institute for Therapeutic Research in West Point, Pennsylvania, claims that companies are reluctant to invest money because "there is currently no basis for the development of an AIDS vaccine".

Some blame this reluctance on the way AIDS research has developed. "The field has been driven by a discipline [molecular biology] and not by good science," claims one leading US vaccine researcher, arguing that this has led to the pursuit of approaches that ignore the pathogenesis of HIV.

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Rising tide: an AIDS patient in Kigali, Rwanda.

He describes the current crop of subunit vaccines, such as those based on gp120 and gp160 antigens, as "the closest thing to insanity". Not only are they designed to reduce viral load — while HIV has high turnover and mutation rates — but they also suppress the cytotoxic T-cell response that clears infected cells and the virus they contain. The latter response is now considered to be an essential component of any effective vaccine.

The OAR review panel is said to have accepted such criticisms. As a result, the panel is expected to recommend abandoning the approach of "simply pushing ahead and testing as you go along", according to William Paul, director of OAR. Instead, it is likely to propose a broader and more fundamental approach, building up a body of knowledge that would remain useful even if the next generation of vaccines should fail.

Similarly, the review is expected to urge NIH to set up a targeted programme. This would include preclinical studies to test vaccine concepts but would stop short of industrial development. Such research is not possible at present, says one vaccine researcher, claiming that funding research through investigator-initiated grants creates a "bunch of little islands" which are failing to accumulate the collective knowledge needed for industrial development.

Paul agrees that a more coordinated approach is needed. But he argues that this must not be at the expense of basic research on AIDS. Bolognesi also says that NIH needs to provide extra money for such programmes, in particular to improve the quality of much research by attracting leading scientists, and to make vaccine research a priority.

Bolognesi also points out that no systematic study has been carried out to determine which animal models are the most predictive of a good vaccine in humans. At present, models are not answering the right questions, he says; "we are mainly guessing".

Another AIDS researcher claims that the expected recommendations of the OAR review would represent a break with work over the past decade, during which AIDS vaccine research has been too distracted by, for example, the debate about whether to conduct clinical trials of subunit vaccines.

Similarly, Jean-Paul Levy, director of the French National Agency for AIDS Research, describes Phase III trials as an "absurdity" at the moment, given the lack of basic knowledge. "We are unsure if we will ever be able to get a vaccine for this virus, which is different to any virus for which we have ever created a vaccine," says Levy.

Not all are convinced that developing an AIDS vaccine means abandoning the traditional approach to vaccine development, however. "If we had been waiting to have all the immunological answers before we made the measles or polio vaccines, we would be still waiting," says Donald Francis of Genentech in San Francisco.

Francis argues that Genentech's gp120 candidate vaccine, which may enter trials in Thailand next year, has already protected chimpanzees and is safe, and that it is ▶

Swiss role in EU research will remain limited

Basel. **An agreement between Switzerland and the European Commission, which would have allowed Swiss scientists to play a more active role in the commission's Fourth Framework Programme, will not be signed this year because of the Swiss government's refusal to comply with the commission's demand that it open its labour market to all citizens of the European Union (EU).**

The two issues are both part of a complex package of proposed agreements on relations between Switzerland and the EU that has been under negotiation since Switzerland abandoned plans to apply for membership of the European Economic Area, as a prelude to EU membership, in 1992 (see *Nature* 373, 462; 1995).

Last week's deadlock in the negotiations means that Swiss scientists will not be apply to apply for EC research money as project leaders from next year, as they had hoped. Under the present agreement, scientists can only take part in the framework projects led by non-Swiss scientists, and cannot become members of decision-making programme committees.

But Tim Guldimann, a member of the group that advises the Swiss government on science and research policy, says that he remains optimistic that agreement could be reached by 1997. Oliver Klaffke