Biotechnology

Australian programme revamped

Canberra

THE National Biotechnology Scheme has re-emerged under the new Australian government as the National Biotechnology Program after a couple of months incubation. But whether the difference goes much beyond nomenclature will become clear only when the allocation of funds is announced in August. The Minister for Science and Technology, Mr Barry Jones, hopes the programme will "bridge the gap between laboratory research and implementation of discoveries".

As proposed by the previous government, the National Biotechnology Scheme would administer A\$2.5 million for basic research as well as applied research in projects showing potential for industrial development. Another A\$2.5 million from the Australian Industrial Research and Development Incentives Scheme would be made available to industry specifically for biotechnology. The principal change is that the new programme will abolish the dual support system and integrate all biotechnology support. Hence university projects with a biotechnological bent, as well as the specific commercial opportunities identified by the Department of Science and Technology (DST) at a workshop in November last year, are eligible for support. In spite of the indecision about the total amount to be allocated, DST will shortly be advertising the programme and calling for applications. It may wish to gauge the demand and adjust supply accordingly.

The government proposals are heavily biased towards applied projects, at the risk of neglecting research in molecular biology on which new advances are likely to be based. A DST spokesman said that a minimum condition for award is evidence of industry interest, but industrial involvement would be preferable. Professor Bill Elliott of the Center for Gene Technology, University of Adelaide, is concerned "whether there is sufficient appreciation of the importance of basic research in molecular biology" and considers that a parallel increase of support for basic research may be essential.

In another move aimed at stimulating the country's biotechnology, the government has decided to introduce legislation allowing Australia to accede to the Budapest Treaty, a patent agreement under the UN World Intellectual Property Organization. According to Mr Jones, "Australia's accession to the treaty will enable industry to have access to microorganisms deposited in any international depository established under the treaty". The need for such access arises because of the technical difficulties of sufficiently describing microorganisms in patent applications. Consequently the present patent law will be changed to enable deposition in an authorized collection to

take the place of a full description for patenting. The legislation will lead to the establishment of an international depository in Australia that might also serve as a national collection for the Australian biotechnology industry.

Vimala Sarma

Cancer causation in booklet form

A NEW booklet published by the epidemiology unit of the British Imperial Cancer Research Fund (ICRF) summarizes the factors which influence the development of cancer. The booklet is based on the book "Causes of Cancer" by Sir Richard Doll (head of the epidemiology unit) and Richard Peto (also from ICRF) which was published in 1981. It takes the criteria drawn up by the World Health Organization in a 1964 report as its definition of extrinsic factors. These cover "man-made or natural carcinogens, viral infections, nutritional deficiencies or excesses, reproductive activities and a variety of other factors

determined wholly or partly by personal behaviour". For each of the environmental factors the booklet assigns a percentage value for the number of cancer deaths in the United States which can be attributed either directly or indirectly to that particular extrinsic factor as compared with the total number of deaths through cancer in any year. The range of confidence with which these figures can be given varies from "highly accurate" in the case of tobacco to "within a factor of two" in the case of occupation and "uncertain but not to be excluded" for food additives. The figures can be misleading, however, as with the effect of alcohol. It appears from the diagram that alcohol accounts for 3 per cent of cancer, whereas alcohol itself does not cause cancer, but instead it enhances the carcinogenic effects of other environmental factors. However, Sir Richard Doll sees the circumstantial evidence for the relative contribution of extrinsic factors to cancer deaths as "sufficient to obtain a conviction in a court of law".

Melanie Kee

Genital herpes

Vaccines show the way

HOPES that a vaccine might one day provide a cure for genital herpes have again been raised by the news that clinical trials of a new vaccine are already under way in the United States, and that a British group is hoping to start trials on another vaccine shortly.

The British group, led by Dr Gordon Skinner of Birmingham University, has developed an acetone-derived subunit vaccine. Although derived from the herpes simplex type 1 virus, which causes oral infections (cold sores), the vaccine is active against the type 2 virus which is responsible for the genital lesions. Tests in volunteers have been encouraging — vaccination protected 97 per cent of partners of known herpes sufferers from attack, and 75 per cent of patients who had themselves suffered one attack were protected from recurrence by three injections of the vaccine. This latter finding is important since it suggests that even though previous infection with herpes does not impart immunity from future infection, a vaccine might give such protection.

As the Birmingham group is quick to point out, however, such limited "volunteer" trials can sometimes be misleading. There is very often a considerable placebo effect and too much dependence on subjective judgements made by the patients themselves. But, encouraged by the early results, the Birmingham workers have started discussions with the UK Committee on the Safety of Medicines with a view to obtaining approval for a properly controlled double-blind clinical trial; similar talks are under way with the US Food and Drug Administration for permission to conduct a trial on 100 patients at Rush-Presbyterian-St Luke's Medical Center in Chicago. Production of the vaccine in the quantities needed for such trials would be undertaken at the Centre for Applied Microbiology at Porton Down in Wiltshire.

In a clinical trial being carried out on 500 individuals in the Seattle area, the US drug company Merck is also testing a DNA-free vaccine. The bulk of the subjects in this trial are the healthy partners of patients who suffer from herpes, and it is clearly in these cases that the vaccine is thought to have greatest potential. Dr Laurence Corry, who is in charge of the Merck trials, feels that the vaccine being tested is unlikely to become available for general clinical use, but that if the results of the trials are promising, a new vaccine will be developed.

The possibility of routine vaccination against herpes, however, is likely to be at least 5 years off even if the present trials are successful. The Seattle trials are due to last about 2½ years and it will be at least 3 years