Biotechnology

Genentech plumps for relaxin

Canberra

GENENTECH Inc. (San Francisco) will have exclusive rights to develop human relaxin, a protein sequenced after its gene was cloned in *Escherichia coli* by Dr Hugh Niall's group at the Howard Florey Institute, University of Melbourne, in collaboration with Dr John Shine of the Research School of Biological Sciences, Australian National University (see *Nature* 17 February, p.628-631). The agreement, signed by the Florey Institute and announced by the director of the institute, Professor Derek Denton, last Thursday, is believed to be Genentech's first foray in Australia. The company won the contract against British, Japanese and other American bidders by virtue of its track record and the attraction of collaboration with Genentech's scientists. Its terms ensure that the Florey Institute will accrue royalties, some of which will flow to the Australian National University, if the hormone is successfully marketed.

Relaxin is a peptide hormone synthesized in the corpora lutea of ovaries of pregnant women. It remodels the reproductive tract to facilitate the birth process by softening bone connective tissue to allow stretching during birth. But its therapeutic usefulness in alleviating the pain of childbirth or in conditions such as rheumatoid arthritis has yet to be demonstrated.

Corporate sponsorship of basic research is likely to increase in the virtual absence of government support specifically for biotechnology.

At present the dual support system for biotechnology funding — a A\$2.5 million allocation from the Australian Industrial Research and Development Incentives Scheme — proposed by the previous government is in abeyance. Since the foundations had already been laid by the Department of Science and Technology and the Australian Science and Technology Council, the new government accepted the system to avoid the delay and administrative duplication that a different scheme might entail. The Minister for Science and Technology, Mr Barry Jones, is enthusiastic about biotechnology but all government spending initiatives, including election promises, are being reviewed by the Minister of Finance, Mr John Dawkins, in the light of the A\$9.6 thousand million budget deficit for 1983-84 predicted by the Treasury.

Judging by what overseas biotechnology companies are spending on research and development, the proposed sum seems hardly adequate and unless implemented this financial year may not help scientists now busily signing contracts. Described by Niall as "a step in the right direction", the A\$5 million, as pointed out by Shine, will

not take a single product off the laboratory benches and carry it through the market.

In the meantime, Australian companies are playing safe. They will support only projects for which the financial returns seem assured. Most companies are prepared to take an idea only as far as necessary in order to patent it, and then sell it to a company that will take it the rest of the way. Only one company, Biotechnology Australia, which does in-house research and has the backing of Conzinc Riotinto Australia, appears capable of taking risks.

Vimala Sarma

Cool on malaria

GENENTECH, the California biotechnology company, has withdrawn from its negotiations with the New York University Medical Center (NYUMC) over the development of a possible vaccine against malaria. One issue that has arisen is whether a commercial partner can accept the terms set by the World Health Organization (WHO) in supporting the research.

WHO has long supported Dr Ruth Nussenzweig's malaria research at NYUMC, which has concentrated upon the sporozoite stage of the malaria parasite — the form injected into the bloodstream through a mosquito bite. In 1981, NYUMC decided that patents should be filed. The content of the patents has not been disclosed but they are presumed to cover the use of monoclonal antibodies, developed by Ruth Nussenzweig and her husband Victor against the sporozoite surface protein, to clone and express the gene for the protein. An account of this last step will appear in next week's *Nature*.

The initial stages of the project, which had not been carried out when Genentech first expressed interest in collaboration, have since been completed with the help of Dr Nigel Godson's laboratory at NYUMC. So far it is only the gene for a monkey malarial sporozoite that has been cloned.

Meanwhile the negotiations with Genentech were widely reported to have ground to a halt with its demand for exclusive rights on the vaccine, pitted against WHO's standard contractual demand for public access to any discovery emerging from the research it sponsors. Shirley Clayton, Genentech's treasurer, this week denied that that was a determining factor in the company's withdrawal from the negotiations. She said that negotiations were never more than very preliminary and have stopped because the company has decided to concentrate its efforts on projects already in hand rather than be distracted by new ones. Peter Newmark

Soviet space programme

International flavour

THE Soviet space programme is acquiring distinctive French and Ukrainian accents. Two major events last month — the launch of the Astron high-altitude satellite and the Comecon meeting in Kiev to prepare for the Halley's Comet mission — illustrate the French connection.

The French are to contribute equipment to the Vega mission (to Halley's Comet with a Venus fly-by) and also participated in the development of the ultraviolet telescope aboard Astron. Both events also had a strong Ukrainian slant — the 80 cm diameter optical telescope carried by Astron was developed by the Crimean Astrophysical Observatory, while the head of the special coordinating committee of Vega is Yaroslav Stepanovych Yatskiv, director of the astronomical observatory of the Ukrainian Academy of Sciences.

The choice of Dr Yatskiv — a mere corresponding member of the Ukrainian Academy — as head of so important a committee is surprising, since such posts are more than likely to be determined on the basis of rank. During the recent celebrations of the sixtieth anniversary of the Soviet Union, there was, it is true, a definite emphasis on the contribution of the academies of the fourteen non-Russian republics to All-Union and world science, whereas during the past two decades the usual trend has been to stress their role as a science base for local research and development. If, however, the chairmanship of the Vega committee was to go to a non-Russian, the most obvious candidate would at first glance appear to have been Academician Viktor Ambartsumyan, president of the Armenian Academy and himself a noted astrophysicist.

Moreover, although several of the Republic academies have established lead positions in certain fields (lasers in Byelorussia, pure mathematics in Lithuania, genetic engineering in Georgia), the speciality that immediately springs to mind for Ukraine is not astrophysics but cybernetics and also — as a result of the filial devotion of the academy's president Borys Yevhenovych Paton, who lauds it on every occasion — welding technology.

In fact, however, the Ukrainian observatories, in particular the Crimean and Khar'kov University observatories and the Principal Observatory of the academy, together with the academy's Institute of Radiophysics and Electronics, have already played a major role in the Soviet space programme. Techniques and instruments originally developed in Ukraine for meteorological observations of the oceans from Cosmos satellites were subsequently applied to mapping the surface of Venus. (Thus the planetological programme will

be continued by a descent module to be launched during the Venus fly-by by one of the two Venera probes, V-15 and V-16, used for the mission.) The Ukrainian interest in Venus is not confined only to the surface however — a Khar'kov team, using computer analysis or photographs taken through a red filter, has calculated the speed of rotation of the upper atmosphere of the planet to be of the order of 100 m s^{-1} .

Indeed, astronomical and astrophysical research in Ukraine ranges from Borys Ryabov's team in Khar'kov, which is studying thunderstorms on Jupiter using a 10-cm band radio telescope, to the new high-power radio telescope at the Crimean astrophysical observatory, and the relationship between solar activity and tree-ring growth (Kiev).

The Ukrainian Academy's Principal Astronomical Observatory moreover coordinates the work of Soviet observatories on the Earth's rotation and the determination

of time, and was the founder of the "USSR Planetary Patrol" sky-watch programme. In the Vega programme its special responsibility will be the ground-based back-up observations of the mission.

All this, however, does not quite explain why Dr Yatskiv, whose name does not even occur in the 1977 Soviet "Biographical Directory of Astronomers" (published in Kiev) should head the international co-ordinating committee for Vega. One not too serious suggestion, made by a fellow Ukrainian, was that the selection was made on linguistic grounds. There is no "H" sound in Russian, and hence the comet's discoverer becomes in Russian "Gallei". (Hence Ve-Ga for the joint Venus-Halley mission). Ukrainian, however, has an H (though no true G), so that Dr Yatskiv will be able to fulfil the prime requirement of an international coordinator — calling the object of investigation by its internationally recognized name.

Vera Rich

Czechoslovakia

Too many tasks, no responsibilities

CZECHOSLOVAK science is seriously hampered by government controls and the five-year planning system, according to a document of the Charter-77 movement that has now reached the West. This claim is not entirely surprising, for the Czech and Slovak media constantly harp on the shortfalls in what the planners see as the main "task" of science — serving the needs of the national economy.

Even so, in recent months, there have been signs of a growing disillusionment with all such official demands. Electronics, for example, is considered a key factor in current development plans, and as recently as the meeting of the Czechoslovak Scientific and Technical Society in February, the society's branch in the Prague Electrotechnical Faculty promised to train up to 3,600 specialists in electronics and microelectronics. Yet a few days ago Prague radio reported that factory managers are apathetic about sending employees to training and refresher courses in electronics.

The main interest of the Charter document (No. 26/1982) is the light it throws on the disillusion felt by the scientific community with the reiterated official line that science must be "present in every chapter of the plan" or, as party leader Gustav Husak told the Czechoslovak Academy of Sciences in February, "science is one of the crucial forces of social progress".

At the beginning of last year, the char-
tists began publishing a series of documents revealing inadequacies of the system that are glossed over or concealed by the government. This report, although signed by the three official spokespersons of the movement (Radim Palous, Anna Marvanova and Ladislav Lis) was clearly compiled by scientists who are struggling to function within the system.

Although some of their complaints (including shortage of funds, and in particular of convertible currency) seem to have an economic basis, the main difficulties have a clearly political background. Thus part-appointed administrators, ubiquitous at all levels of the scientific establishment, take key decisions on promotions, budgets and the permissibility or otherwise of foreign contracts. Publication of research results is strictly censored, and publication in foreign journals tacitly discouraged for fear of political repercussions.

The document also says that strict adherence to the five-year plan, and the needs of the economy, mean that radical new lines of research get little or no encouragement, initiative meets with no approval and informal working groups of scientists with common interests are virtually unknown. Weakest of all are professional contacts with foreign colleagues. All such contacts, even the most innocent and unsolicited routine correspondence (for example, to verify a reference in a published article), have to be reported to the authorities and fully accounted for on a special form. Such restrictions, the compilers point out, can only harm the ultimate development of Czechoslovak science.

Most serious of all, in the long run, is the virtually total neglect of basic research. In a covering letter, addressed to Prime Minister Strougal, the State Planning Commission, the Academy of Sciences and the Czech and Slovak Ministries of Education, the spokespersons add their own weight to this lack. Modern science, they point out, is largely "the practical consequence of theoretical thrusts of the human spirit (Descartes, Newton, Einstein *et al.*)". The present neglect of science for political motives is, they conclude, "tragic".

Vera Rich

UK pharmaceuticals

A matter of Life

LIFE, the national anti-abortion organization, has asked police in Birmingham to investigate a nearby abortion clinic which supplies the so-called "morning-after pill". Post-coital hormone treatment (PCHT) — usually a combined ethinyloestradiol/levonorgestrel formulation — is now widely prescribed in the National Health Service and in private clinics to prevent pregnancy up to 72 hours after unprotected intercourse. Life believes that PCHT is abortifacient and that anyone prescribing it is committing an offence under the 1861 Offences Against the Person Act. Interestingly, however, the organization has not made a complaint about the post-coital use of intra-uterine contraceptive devices (IUCDs), which is also widespread and is thought to work in a similar way in many cases.

Life's argument is that PCHT is not a contraceptive, because its mode of action is to prevent the newly fertilized ovum from implanting in the uterus. There has been no ruling in the courts on the legality of post-coital contraception, although guidelines published by the Department of Health and Social Security (DHSS) in 1979 do class the technique as contraceptive rather than abortifacient. DHSS takes the view that as "carriage" (that is, implantation) cannot occur in less than 72 hours following intercourse, there can be no possibility of procuring miscarriage before this time — which would indeed be illegal under the 1861 act if it was done recklessly or intentionally. However, the use of the word "carriage" in this sense is unknown to the editors of the Oxford English Dictionary, and Life argues (from its firmly declared position that legal rights begin at conception) that preventing implantation is tantamount to abortion — or as Life would probably put it, infanticide. There is no suggestion that the clinic in question has used PCHT after the 72-hour limit.

If it is established that PCHT is abortifacient, its use would have to be justified on medical grounds by two doctors in order to comply with the 1967 Abortion Act. However, even in this case a successful prosecution would appear unlikely, since the 1861 Act would require proof of *intention* to procure miscarriage. The defendants would probably be able to argue, after taking the best advice available, that no such intention was present.

IUCDs are also thought to act by preventing implantation, whether used pre- or post-coitally. Three years ago the Director of Public Prosecutions declined to prosecute Professor Peter Huntingford of St Mary's Hospital Medical School for inserting an IUCD as a pre-coital contraceptive, when he attempted to start a test case. But Life appears unwilling to take on the estimated 250,000 IUCD users in Britain.

Tim Beardsley