

## Newsdesk

### Human genome project

Although not exactly news, interest (and some concern) is mounting about the information that is increasingly becoming available through the human genome project (HGP) (see commentary by Charles Cantor in *Nature Biotechnology* 1998;16(March):212). Already some 100 000 genes have been identified and the explosion in research activity that will follow this knowledge is undoubtedly leading to a new level of investigative strategy since, as Cantor states, "Anyone who seriously contemplates the currently available data is overwhelmed by it". At the moment much of the activity is akin to stamp collecting and this is no less true for ophthalmic research where, for instance, identification of genes for retinitis pigmentosa has not yet led to a flood of information about how the disease is produced mechanistically.

At the present time several obvious benefits will derive from information revealed through the HGP. This includes better diagnostic tests for disease detection which itself inevitably will lead to new treatments and even some cures. Clinical trials may themselves be better focused and less expensive with more precise information on disease definition. For instance, when the many genes that govern intraocular pressure control are identified, it may be that certain drugs are best suited to certain types of primary open angle glaucoma but not others. Therefore, a diagnostic genotyping at the time of glaucoma detection may help the physician to select the best antiglaucoma therapy for each patient.

The much heralded gene therapy approach for the treatment of disease should also in theory be more generally available with further information from the HGP. However, while somatic gene therapy, in which the gene rather than the gene product (for example, insulin) is used, poses no real dilemmas, germ line gene therapy, in which the heritable genetic make up of the individual is constitutively altered, has a significant moral dimension according to Cantor. The HGP also has wider implications for such topics as population control, eugenics, cloning, and spare part surgery. Cantor believes strategic decisions and legal statutes have to be developed now while the HGP is still on the short to middle distant horizon.

### Biotechnology companies join forces

The value of the data emerging from the HGP (see above) is highlighted by the recent collaboration developed between Cambridge Antibody Technology (CAT) Group plc and Progenitor, Inc. CAT is a UK biotechnology company with a world leading technology for the rapid isolation of human monoclonal antibodies. CAT is using this technology platform to develop a broad portfolio of antibody based human therapeutic products and as a drug discovery tool, particularly in functional genomics. Progenitor discovers and develops genomic leads and targets for new pharmaceuticals using a technology platform that combines developmental biology and disease genetics to identify, characterise, and utilise key genes responsible for health or disease.

CAT claims that its expertise can be directed specifically in the field of functional genomics in which "biological meaning is extracted from the mass of raw sequence data being created by research into the human genome". At the present time the CAT Library™ has more than 67 billion distinct antibodies in its biological vault. In addition, CAT has initiated clinical trials during 1997 in inflammation and fibrosis and has plans to commence three to four clinical programmes per year from the year 2000. The information derived from the HGP is clearly invaluable to CAT and Progenitor and will have significant impact on the range of therapeutics available to prevent and cure disease in the 21st century. Without the HGP such developments would not be possible on such a grand scale.

### Too many meetings? Why not go video conferencing?

The first global video conference in ophthalmology was held between Bristol, New York, Athens, Thessalonika, and Kuala Lumpur on 7-8 March 1998 coordinated by VideoWeb Ltd and Atel Systems. According to the company it was the first event of its kind to allow experts and senior politicians to exchange ideas, information, and views across several continents with participants at each location interacting with each other by sight and sound in real time. The participants were the Bristol Eye Hospital, the Tun Hussain Onn National Eye Hospital in Kuala Lumpur, the New York Eye and Ear Infirmary, the Hellenic Ophthalmological Society, and the Ophthalmology Society of Northern Greece. Fourteen speakers during the two day conference were able to present material interactively to more than 1000 colleagues. According to the organisers, participants found little difficulty in coping with the technology. If this approach to information exchange takes off it may solve the problem scientists and clinicians currently experience with demands on their time to attend yet more meetings.

### Award for Professor Harry Keen

A new international award, the "Helmuth-Mehnert United Nations Award", commemorating the 70th birthday of Professor Helmuth Mehnert, has been presented to Professor Harry Keen of Guy's Hospital, London. Professor Keen is vice president of the British Diabetic Association and honorary president of the International Diabetes Federation. The prize has been awarded to Keen in recognition of his work on the prevention of diabetes and its complications.

The prize, worth DM100 000, was presented by representatives of the United Nations, UNESCO, and the World Health Organisation to Keen in recognition of his discovery of the importance of microalbuminuria the early 1960s and of the insulin pump in the 1970s. In addition, Keen was chairman of the WHO Expert Committee on Diabetes in the 1980s and he has also been a major fig-

ure in the formulation of the St Vincent Declaration with its stated aims of reducing the complications of diabetes by the year 2000.

### Behçet's disease forum

The second UK Forum on Behçet's Disease was held in Leeds (March 1998) with ophthalmologists and physicians taking part. The ophthalmic section was charged with the remit of devising a protocol for the safe withdrawal of systemic immunosuppression from patients with Behçet's disease which would deal with the problem of preventing recurrence, since in such patients withdrawal can often be associated with severe reactivation of the ocular disease. Although Behçet's disease can "burn out", in the sense that signs of active inflammation may be absent for several months to years, such patients may still be maintained on low dose but long term immunosuppression. The issue of drug withdrawal quickly resolved to two subissues—that is, how and when to withdraw immunosuppression. A consensus was reached in that the method of drug withdrawal should be such that the vision should not be threatened while the drug was being withdrawn. In this respect there was a general agreement that precipitate withdrawal of cyclosporin, in particular, can often result in an aggressive ocular recurrence which may be irreversible if the macula is rendered ischaemic. A recommendation was made to establish a UK Behçet's database or national register which could provide useful epidemiological information. Behçet's disease is recognised to be a relatively rare disease in the UK but is disproportionately represented in uveitis clinics because of its devastating visual effects.

### Cues for depth perception

Although our view of the world is three dimensional, the retinal image is flat. Therefore, considerable information processing must occur between the retina and the brain in order to convert the two dimensional image to three dimensions. According to Bradley *et al* (*Nature* 1998;392:714) one of the most potent cues for reconstructing the image in three dimensions is image movement. The neural basis for this "structure from motion" effect is unknown but is apparently encoded by neurons in the cortical GMT area, a region involved in motion perception. In their study, the two dimensional projection of transparent rotating three dimensional cylinders was perceived as three dimensions but there was spontaneous reversal of the surface because this was not specified by the stimulus. In these primate experiments there was undetectable neuronal activity which coincided with the perception of image reversal even though the stimulus remained unchanged. The authors contend that this provides the first direct evidence for structure from motion three dimensional perception and locates the site of activity in the area MT, which has neurons with large receptive fields capable of spatially integrating direction and depth selective motion cues, even though it clearly does not offer an explanation for the effect.



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