

Newsdesk

Eye catching science

It's all very well having revolutionary ideas but it seems that today, if you can join that growing club of 'visible scientists' then your chances of making an impact are much higher. Bernard Dixon, reporting in the July issue of *Current Biology* (1997;7:R3), recalls Ray Goodall's definition of 'visible scientists' as bench scientists who discoursed frequently and opinionatedly about the importance and impact of science on society. Names which readily come to mind are David Attenborough, Carl Sagan, Richard Dawkins, and Steve Jones. A new name has been enlisted, that of one time bunny girl, Polly Matzinger. Her claim to fame derives from her promulgation of a 'danger theory' which challenges the long held view on immunological defence systems based on the Medawar-McFarlane Burnet self/non-self theory. According to Matzinger, the body does not differentiate signals on the basis of whether they are foreign or not but on the basis of whether they represent danger or not. Thus, many foreign antigens are actually not recognised as dangerous and a symbiotic relation between host and invader can develop. The corollary is of course that some self antigens can, under certain circumstances, also be recognised as 'dangerous' and the body mounts the same sort of immune response to them as to dangerous invading antigens, thus leading to autoimmune disease. This contrasts with the normal response to self antigens in that the body recognises self antigens as self but does not react to them.

Matzinger bases her theory on results of experiments on neonatal mice which were manipulated to show that they are not inherently tolerant of foreign antigens but can in fact respond to them in the same way as adult mice. As pointed out by Peter Beverley (*Immunology Today* 1997;18:413) this has implications for vaccination programmes and disease control generally.

Whether or not Matzinger is right remains to be seen. However, Dixon's emphasis is not so much on the content of Matzinger's thesis but on the style with which it is promoted, catching the eye of the media, including the editors of the BBC's *Horizon* programme, and thus bringing science, and in particular immunology, into everyday conversation. Activity in raising the level of public awareness of science in the UK is being promoted by groups such as COPUS (Committee on the Public Understanding of Science) through the auspices of the Royal Society and the British

Association. Ophthalmology and visual science has many areas which it could similarly promote if it made itself more 'visible', particularly in the areas of the many revolutionary new procedures and techniques which it employs, and links with organisations such as COPUS might assist this process. Functional magnetic resonance imaging is but one of these that has the potential to break new ground within non-medical fields such as psychology and even philosophy upon which it must surely impinge!

Opportunities for engaging the media can also be assisted through the Media Resource Service which has a database of 6000 experts in many fields and is keen to register new applicants. In addition the MRS itself can be accessed with a view to contacting experts in particular fields by scientists in other fields. The address to write to is the Novartis Foundation, Information Services, 41 Portland Place London W1N 4BN.

Register your negative clinical trial data here

A recent editorial in the *BMJ* (1997;315:622) has highlighted the importance of reporting negative as well as positive results of clinical trials since such practice helps to ensure that systematic reviews of therapies, which often act as the reference point for new therapeutic regimens, represent truly effective management and that misleading conclusions, and particularly unnecessary repeat trials, are avoided. The difficulty is how do researchers gain access to the press for publication of negative, and by implication, uninteresting results.

The editors of nearly 100 journals have collaborated to call an 'amnesty' of negative clinical trial reporting which in essence provides readers with the opportunity to register their unreported trials data by filling in and returning to the editorial office an 'unreported trial registration form'. Actual registration of the data is not necessary merely the information that a trial took place and the results were negative. Clearly, however, if the data can be made available for archiving then that would be the preferred response. Sending the information by email is also possible to meta@ucl.ac.uk. Finally, all received information will be made available generally on a web site and if further information is required by a 'browser' then he or she would have the opportunity to contact the triallist directly.

On the TRAIL of death

Spontaneous regression of intraocular tumours is a well recognised if rare phenomenon and its mechanism has remained obscure. Failure of the tumour blood supply to match the rate of tumour cell growth is a commonly accepted route but induction of cell death by apoptosis-inducing ligand-receptor interactions, such as TNF α -TNF receptor and Fas-FasL, is also considered to be a possible mechanism. Other candidate proteins are being discovered, such as TRAIL, which have the ability to induce apoptosis, but seemingly only in transformed cells not in normal cells. Two recent reports (*Science* 1997;277:815 and 818) have raised a puzzle in that normal cells as well as tumour cells appear to express the TRAIL receptor. Somehow normal cells have a mechanism for providing a decoy to receptor engagement but how this happens is incompletely understood. Whatever the finer points are concerning the precise interaction of TRAIL and its receptor, the exciting developments in this area relate to the possibility of using these molecules as tumour killing agents. While TNF α would not be considered at present to be suitable because of the severe 'bystander' inflammatory response that TNF α induces, TRAIL apparently induces tumour cell death without much associated inflammation. A non-inflammatory anti-tumour agent which could cause regression of tumours in the eye without killing normal cells and without inducing a significant inflammatory response would seem to be an ideal therapeutic agent for intraocular use.

Progress in gene therapy

There seems to be increasing expectation that gene therapy is just around the corner. The latest approaches include the simple application of oligonucleotides in vivo from the treatment of viral disease and cancer. Antisense oligonucleotides when administered in vivo appear to have the potential to be taken up by cells and incorporated into their DNA. They thereby interfere with normal transcription of cell proteins by binding to the DNA in the reverse direction and halt the sequential addition of new nucleotides. In cells infected with virus or cells producing abnormal 'tumour associated' proteins, both viral transcription and tumour cell protein synthesis can be arrested. The potential application to ophthalmic disease is self evident.



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