Nobel mystery

Research by two King's scientists in the mid-1980s has turned out to be central to a controversy surrounding the recent award of a Nobel Prize.

Last October the Nobel Prize for Chemistry was awarded to Peter Agre for the discovery of water channels in cell membranes known as aquaporins.

Working at the John Hopkin's University in 1991, Agre reported the amino acid sequence of a protein that he thought 'may be the long-sought-after water channel' in biological membranes. He then went on to sequence, clone and eventually describe the molecular structure of these channels.

The controversy arises from the lack of recognition by the Nobel Prize Committee of the work of the Romanian scientist Dr Gheoghe Benga and his group. They published a substantial body of research in this area throughout the 1980s, preceding Agre's work.

In 1986 they detected the glycosylated form of the protein, subsequently worked on by Agre, which they correctly identified as playing a key role in water transport through cellular membranes.

The King's connection relates to work carried out by Dr John Wrigglesworth and Dr Tony Brain of the Life Sciences Department in collaboration with Dr Benga. One of the several publications from this collaboration was a 1986 paper entitled *Water permeability of human erythrocytes: Identification of membrane proteins involved in water transport.*[1]

Benga's early work was completely overlooked by the Nobel Prize Committee. In the announcement of its award to Agre they stated '...even as late as 1987, nobody had been able to identify a water channel protein and the very concept of water-specific channels was still controversial.'

Dr Wrigglesworth commented: 'I was very happy to see that Peter Agre was awarded the Nobel Prize last year for his outstanding work on the molecular structure of aquaporins. However, I am fully aware of the research of Benga's group, especially that published in the mid and late 1980s, in which we played some small part. Much was clearly reported in western journals, including the USA journal *Biochemistry*, and described the first identification of a water channel protein in erythrocytes with a characterisation of some of its properties and a full appreciation of the implications for water balance.

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Dr John Wrigglesworth *(left)* and **Dr Tony Brain** examine their original freeze-fracture electron micrographs of water channel proteins

A key role in water transport through cellular membranes

'In this age of easy electronic searches we tend to forget that before pre-electronic publishing it was very important to supplement and promote the case for published research by presentations at scientific meetings and visits to other laboratories especially in the USA. The restrictive Ceausescu regime in Romania at that time made travel very difficult for Benga. I feel his research on water channels has not had the full recognition it deserves. This is an example of the negative interactions that can often occur between politics, ethics and science.'

A full background to the controversy can be seen at www.ad-astra.ro/benga/

[1] Benga, Popescu, Borza, Pop, Muresan, Mocsy, Brain and Wrigglesworth, Eur J Cell Biol 41 (1986) 252-262

Launch of MB BS Graduate and Professional Entry Programme

The Graduate Professional Entry Programme is a new four year course offered jointly by the Guy's, King's & St Thomas' School of Medicine in collaboration with partners in the University of Kent, Canterbury, Christ Church University College, the University of Greenwich and the NHS in south London and Kent.

This new programme is designed to attract graduates to the School, offer opportunities to widen access to graduates and health care professionals and to improve recruitment and retention in the NHS in Kent.

The course will start in September 2004 enrolling 40 students. Applications are encouraged from science or arts graduates of suitable academic ability and from health professionals who can demonstrate appropriate potential.

Dr Nigel Bateman, the Site Dean at St Thomas' campus said: 'The first students on the new Graduate and Professional Entry Programme students will qualify in June 2008. The presence of these students, with their particular abilities, attitudes and experience of life, will enhance the MB BS course in the eyes of other students and of the staff that teach them. .

For further information about the course contact Dr Bateman at nigel.bateman@kcl.ac.uk