Professor Emeritus Sir Gustav Nossal
AC CBE FAA FRS

THE UNIVERSITY OF MELBOURNE

25th September, 2006.

Mr Elton Humphrey
Community Affairs Committee
Department of the Senate
PO Box 6100
Parliament House
CANBERRA
A C T 2600

Dear Mr Humphrey,

This brief letter is to support the Lockhart Recommendations on Stem Cell Research and the proposed legislation which is seeking to gain endorsement of these recommendations. Rather than repeating the arguments *in extenso*, please permit me to attach to this letter an Opinion Piece that I wrote for *The Australian* some weeks ago on this matter.

Yours sincerely,

G. J. V. Nossal.

Enclosure

Department of Pathology
The University of Melbourne Victoria 3010 Australia
T: +61 3 8344 6946 F: +61 3 9347 5242

Keeping the door open in stem cell research

Sir Gustav Nossal

In the four years since the Commonwealth legislated to allow embryonic stem cell research, Australian scientists have taken a huge leap forward, being at the forefront of this massive global endeavour. Knowledge in fields such as diabetes and diseases of the blood, heart, lung and breast has advanced, and the legislation has also allowed improvements in IVF technology, resulting in higher success rates. Embryonic stem cell research is rich in promise. It has already demonstrated its potential in the study of disease causation, in development of new diagnostic methods and in basic research. In the longer term, the possibility of new therapies for serious diseases is real, though this will be the work of decades rather than of years.

Australia's prominence in the field was the result of a conscience vote in the Australian Parliament in 2002. How can we ensure that our scientists stay in their leadership position? Stem cell science has advanced to the point where it is pushing against the boundaries of the current legislation. It is time for the next step. This involves a marvellous new tool, validated in experimental animals, known as somatic cell nuclear transfer (SCNT) which has become controversial because the first steps resemble those involved in cloning (for example sheep Dolly). No responsible scientist would even contemplate cloning a human being, so why do we want SCNT?

In this technique, a single cell, for example a skin cell, is taken from a person, say a patient with a particular disease. A second cell, namely an egg cell, is obtained from an unrelated woman, usually as a spare egg from an IVF programme. The egg's own nucleus is removed and the nucleus of the skin cell inserted in its stead. Then the egg is coaxed to divide and eventually embryonic stem cells genetically similar to the skin cell donor are developed. The first application of these methods would be to study the genesis of the disease in question and to test new pharmaceuticals as possible treatments. When research has advanced to the stage where curing a disease by a stem cell transplant is possible (and I stress this is well into the future), SCNT could be used to ensure that the transplanted cells, now genetically matched to the patient in question, would not be rejected by the immune system, thus removing a formidable obstacle.

Recognising that embryo research was a sensitive area, the Commonwealth Government appointed Mr Justice John Lockhart to conduct an independent review and to make recommendations. His Committee received over a thousand submissions, met with people of every shade of opinion on the science and ethics of human embryo research and gave due consideration to societal values and the public good. Lockhart's Committee was a group of distinguished and highly qualified Australians from the fields of science, law and ethics, including a Nobel Laureate. Their Report put forward 54 recommendations including one permitting SCNT under strictly defined conditions. Sadly, Judge Lockhart died shortly after his thorough and insightful Report was handed down. To the considerable surprise of the scientific community, this key element of the Report appears to have been initially rejected by the Federal Cabinet, although the Prime Minister has kept the door ajar by agreeing to an informed discussion in the Coalition party room in

August. In the meantime, the Lockhart Report will be discussed at the Council of Australian Governments (COAG) meeting next Friday.

Lockhart is not alone in his views. SCNT is allowed in ten countries and the Report's proposals closely mirror current United Kingdom legislation. Opponents of SCNT have as their greatest concern that scientists may use it for reproductive purposes. In fact, Australian scientists fundamentally oppose reproductive cloning. Moreover, the matter can and should be clearly and firmly addressed with precise legislation and a rigorous licensing system. Reproductive cloning is abhorrent and must be banned outright.

The situation has some similarities to the debate on IVF in the 1970s, where again Australia was a pivotally important leader in research. In 2006, IVF is an accepted part of our lives and through this previous example we have shown the virtue of an acceptable legislative framework to support emerging scientific technologies.

As a Catholic, I deeply value my nine years' education at a Jesuit school, and my career as a medical scientist has further deepened my respect and reverence for human life. Embedded in this value is the belief that everyone should be given the opportunity to live as free from serious illness as medical science can ensure. I do not know whether or when stem cell science will provide the breakthroughs we so earnestly hope for. I do know that the whole history of science shows that major discoveries assiduously followed sooner or later provide practical benefits. I am proud of Australia's achievements in medical research. Our scientists would bring to the study of SCNT cell lines the imagination and resourcefulness so characteristic of Australia's medical research. Australian legislators must now decide whether our scientists will be allowed to keep pace with the world's best or whether they will gradually fall behind. I sincerely urge a change of heart at the highest political level in the land.

Sir Gustav Nossal is Professor Emeritus in the Department of Pathology, The University of Melbourne, and was Australian of the Year in 2000.