

European ethicists discuss stem cell research...

Bioethicists meeting in Brussels to discuss human stem cell research, the source of stem cell material, European regulations and patent control of the field, have been urged to take a "cautious middle ground," particularly on such controversial aspects as the therapeutic cloning of embryos from which stem cells could be taken.

Alastair Campbell, Bristol University's Professor of Ethics in Medicine, was one of several experts addressing a roundtable debate on the ethical aspects of human stem cell research, hosted by the European Group on Ethics in Science and New Technologies (EGE) in Brussels. Rather than imposing an outright ban or an unambiguous endorsement on such scientific activity, Campbell urged the meeting to consider a third option: regulation on a case by case approach, which would reflect "a strong body of moral opinion" that human embryonic life has a special status, deserving of respect, but not of total protection in all circumstances.

The roundtable views will form an EGE "opinion," due later this year, requested by the European Commission. The request comes amid concerns of the effect of patents on research and the possible importation of human stem cells from the US, where research driven by the commercial sector is more advanced.

Campbell argued that the crux of the ethical debate was that the only way to pursue useful research into the possibility of creating compatible tissue from pluripotent stem cells was first to create an embryo using the technique of somatic cell nuclear transfer or therapeutic cloning. Cell division could then proceed to the blastocyst stage of 5 to 6 days, before removing stem cells and disposing of the embryo. As stem cells derived from "spare embryos" following *in vitro* fertilization or from aborted fetuses would not be genetically identical to the recipient's cells, there is a danger they could be rejected, he argued.

However, one of Europe's most advanced stem cell research projects is carried out in Sweden using embryos donated on the basis of informed consent following *in vitro* fertilization. Outi Hovatta, professor of Obstetrics and Gynecology at Stockholm's Karolinska Institute, explained that Swedish law allows research on human embryos for up to 14 days after fertilization. In April, both the Swedish medical research and ethics councils also gave permission to culture cells derived

from the inner cell mass of *in vitro* fertilization-derived blastocysts.

It was agreed that in this instance, culturing embryonic stem cells was different from culturing a human embryo beyond 14 days, as the inner cell mass is only part of the embryo and a cell line is not an embryo. Hovatta said they had developed their own new techniques for isolating the cells and that in the future they hoped to apply this research to differentiate human blood stem cells and thereby avoid the need for expensive bone marrow transplant operations.

However, she feared that developing the treatment would be made "completely impossible" if the broad patent claims from US commercial companies were also granted in Europe. Although the EU Biotechnology directive states that the industrial and commercial use of human embryos should not be patented, André Remond from the European Patent Office commented that it would be wrong for sci-

entists not to get some form of patent protection given the enormous potential of the research.

EGE president Noëlle Lenoir said her group's opinion was being sought as the "use of human origin products was taking on an unprecedented industrial scope." There are 750 European patents for genes alone and several patents covering stem cell research have already been submitted.

Presently, human embryo research is forbidden in several EU countries, notably, Germany, Austria and Ireland. In France, research leading to the destruction of the embryo is prohibited. Plans by the German Research Association to import human stem cell lines from the US—though legal—has aroused public opposition.

A five-year moratorium on research is one option under consideration in Germany. Laws are being prepared in the Netherlands, Belgium and Finland and research is permitted in Denmark, Spain, Sweden and the UK.

Tony Sheldon, Brussels

...and AHA announces support for the technique

Endorsing a growing movement among medical research charities that the time is right to fund research on stem cells derived from discarded *in vitro* fertilization embryos, the American Heart Association (AHA) has weighed in on the side of the American Cancer Society, the Juvenile Diabetes Foundation and more than 100 other organizations that finance stem cell research. This is a significant policy change for a group that does not fund work on fetal tissue.

Although relatively late in taking a stand, the AHA, with its \$130 million budget, brings a hefty influence to this area of research. According to Rose Marie Robertson, AHA's newly elected president and a cardiologist at Vanderbilt University in Nashville, the Association's position represents a general agreement among its 4 million volunteers—representing a cross section of the American public—that stem cell research should advance. Robertson says she expects the first proposals to arrive after research guidelines and instructions are finalized by the organization's 43-member board early

next year.

Whereas the AHA does not solicit applications by research subject, stem cells are of particular interest to cardiovascular research because heart attack and stroke, which are the first and third largest cause of death among Americans, respectively, destroy heart muscle and brain tissue that the healing response does not replace. New cardiomyocytes and neurons derived from stem cells could save and improve lives, such as those of the 4 million Americans who suffer from congestive heart failure.

But despite the increasing flow of private funding into stem cell research, there is still no word on how, or if, public money will support the field. A bill that would reverse a 1996 ban on federal funding for the technique comes up for discussion in the Senate this summer. Texas Governor George W. Bush, who is ahead in most presidential candidate polls, has stated that his pro-life views would compel him to continue the ban.

Potter Wickware, San Francisco



Rose Marie Robertson