

Stem cell and embryo research

The Royal Society regularly evaluates and assesses scientific developments in the area of stem cell and embryo research through its independent stem cell group.

Background

The Royal Society believes that stem cell derived therapies could help to improve or even save the lives of many patients worldwide, including those suffering from serious injury or disease. Therapies may be developed using adult, foetal or embryonic stem cells. It is important that avenues of stem cell research, and stem-cell related technologies, are not closed until they have been fully investigated and proven not to be viable.

The Royal Society strongly supports the translation of basic stem cell research into clinical practice when the evidence supports efficacy and safety of clinical use. It is important to be realistic concerning the length of time it may take to develop stem cell research into effective treatments.

Human admixed embryos

Throughout the development and passage of the Human Fertilisation and Embryology Bill, the Royal Society has emphasised the need for scientific studies using Interspecies Embryos (now referred to in the draft legislation as Human Admixed Embryos). The Society has given its backing to the creation of human admixed embryos because it feels that the scientific evidence now justifies the development of such techniques.

These techniques will enable scientists to produce stem cells without needing to use human eggs, which are in extremely short supply. In addition, this research will facilitate further understanding of basic stem cell biology, for example, how stem cells become different cells in the body, and to understand the genetic causes of disease. These techniques will also enable researchers to determine the importance of communication between the cell nucleus and other components of the cell, including mitochondria (the essential 'powerhouses' of the cell).

Legislation and regulation

The UK has an international reputation as a leader in stem cell science. Its position as an innovator and world leader in this area can be attributed, at least in part, to the legislative structure and regulatory process which have overseen embryo and stem cell research in this country. The role of the regulator is also crucial to foster public confidence in stem cell and embryo research – its assessment of individual research projects ensures that research in this area is carried out responsibly.

Stem cell research is a rapidly advancing field. It is crucial that the UK's legislative and regulatory framework for embryo research, implemented by the Human Fertilisation and Embryology Authority, continues to ensure that new stem cell techniques are justified both ethically and by scientific need.

The UK must support the safe, successful and rapid translation of basic stem cell research into clinical practice, when the time is right, to achieve the ultimate goal of using stem cells therapeutically.

The Royal Society has closely followed the development and progress of the Human Fertilisation and Embryology Bill. We have spoken out in areas where the Society is best placed to provide balanced and sound scientific advice – for example concerning the creation of human admixed embryos for research. We

consider commenting on the detailed regulatory requirements for the development of therapeutic treatments to be outside of our remit. However, we see a benefit in 'future-proofing' legislation to allow for stem cells to be used therapeutically, providing that any new advances are fully supported by scientific evidence to ensure they are a safe and appropriate next step.

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