ヒト胚研究の実情

- 2012.4現在、21申請機関からの研究にライセンス付与
- 2012.4現在、1申請機関からのライセンス申請が審査中（CARE, Nottinghamの申請：卵子と胚における染色体の一致とモザイクの検討）

University of Newcastle Upon Tyne, Centre for Stem Cell Biology & Developmental genetics, Institute of Human Genetics

Derivation of Embryonic Stem cell Lines from Interspecies Embryos produced by Somatic Cell Nuclear Transfer (R0179)

Person Responsible: Dr Majlinda Lako

Embryonic stem cells (ESC) are potential useful because they can be differentiated into most of the cell types found in the adult body so in theory at least they could be used as a source of cells to replace disease damaged tissues.

To prevent immune rejection of these cells, it would be necessary to make their parent ESC genetically identical to the patient and the only way be can do this so far is by nuclear transfer(sometimes known as therapeutic cloning).

The problems with nuclear transfer are that it hasn't been proven to work with human eggs and from studies in animal cloning it doesn't necessarily complete the reprogramming of the patients genes that is needed for us to be able to generate ESC and genes which should only be switched on in the patients body cells sometimes persist in the cloned embryo. Clearly, we need to investigate the method the egg cell uses to reprogram the patient's cells but we can't do this with the small numbers of human eggs currently available.

The use of animal eggs offers a potential way around these problems. ESC generation from cloned embryos produced by transferring human cells into rabbit eggs has been demonstrated in China. These cells seem to behave in a manner very similar to 'normal human ESC we believe that this technique should be applied and extended in the UK since it is a useful investigative tool that will provide us with a great of data on how reprogramming works.

If we can understand this process, we may be able to devise methods of producing ESC like cells without having to use egg cells in the first place which will not only greatly increase the potential usefulness of ESC for curing disease but will also eliminate the ethical concerns associated with the creation of embryos solely for the purpose of ESC derivation.

ニューカッスル大学の申請（Dr Lako)

患者細胞から未受精卵子に核移植しES細胞を作成したいが、十分な卵子が得られない

動物卵子に対して、ヒトから核移植することでリプログラミング機構を研究する

これによりヒト卵子を用いる倫理的懸念も回避できる

http://www.hfea.gov.uk/1580.html

F-2010-00232 - Research licences

13 October 2010

Summary of request

The Authority was asked for information about licences it has granted for research on human admixed embryos, when the licences were issued and for what terms.

HFEA response

The HFEA has issued 3 licences authorising the creation and use of human admixed embryos.
The first licence was issued to the Centre for Stem Cell Biology and Developmental Genetics at the University of Newcastle on 1 February 2008. This licence was valid for 1 year and expired on 31 January 2009. This licence was renewed for a further three years. The renewed licence was valid from 1 February 2009 until 31 January 2012. Earlier this year the Person Responsible applied for the licence to be revoked. The Authority's Research Licence Committee, at its meeting on 15 September 2010, agreed to revoke the licence with immediate effect.
The second licence was issued to the Stem Cell Biology Laboratory at King's College, London on 4 February 2008. This licence was valid for 1 year and expired on 31 January 2009.
The third licence was issued to the Clinical Sciences Research Institute at the University of Warwick on 1 July 2008. This licence was for 1 year and expired on 30 June 2009.