Research Licence Application Inspection Report

Project Title	Genetic screening of the preimplantation embryo
Centre Name	Centre for Human Reproductive Science, The Assisted Conception Unit, Birmingham Women's Hospital
Centre Number	0119
Research licence Number	Application
Centre Address	Assisted Conception Unit, Birmingham Women's Hospital, Edgbaston, Birmingham, B15 2TG
Treatment centres donating to this research project	0119, ACU, Birmingham Women's Hospital
Inspection date	18th July 2008
Licence Committee Date	16th September 2008
Inspector(s)	Andrew Leonard; Janet Kirkland
Fee Paid - date	Fee paid
Person Responsible	Dr Jackson Kirkman Brown
Nominal Licensee	Dr Sue Avery
Licence expiry date	Application

About the Inspection:
The purpose of the inspection is to ensure that research will be carried out in compliance with the HF&E Act 1990, Code of Practice, licence conditions and directions and that progress will be made towards achieving the stated aims of the project.

The report is used to summarise the findings of the inspection highlighting areas of firm compliance and good practice, as well as areas where improvement may be required to meet regulatory standards. It is primarily written for the Licence Committee who makes the decision about the centre's licence application. The report is also available to patients and the public following the Licence Committee meeting.

This report covers the licence application and all relevant paperwork and the inspection visit

Brief Description of the Project

Project: **Genetic screening of the preimplantation embryo**
Licence application

The lay summary of the project is as follows:

When embryos are produced by IVF, during the first few days after fertilisation when they are still just a few cells, one or two of these cells can be taken without affecting the health of a future child. The reason to do this is to use genetic screening to check for severe debilitating illnesses or things which would cause a miscarriage and the associated upset. In an ideal world these can be avoided as IVF creates a number of embryos and so we could only pick those without problems to put back.

Currently one problem with these diagnoses is that in the early embryo not all cells are the same and the one cell that you take and sample may not be representative - you could make a misdiagnosis. Through use of embryos that would otherwise be disposed of we aim to establish clear and safe techniques to make an accurate diagnosis in these early embryo stages.

Research activities	Research on human embryos	✓
	Storage of licensed material	✓
	Creation of embryos for research	
	Derivation of human embryonic stem cells	
	Cell nuclear replacement	

Summary for Licence Committee

This project is being proposed by Centre 0119 to investigate genetic mosaicism in embryos. The project will be partially undertaken in the clinical embryology laboratory of Centre 0119, where there is a research dedicated incubator, into which embryos donated to the project through established donation procedures by patients at the Centre will be placed. A specified clinical embryologist at Centre 0119 will monitor the culture of these embryos and use the centre's ICSI microscope to biopsy blastomeres from them. Blastomeres will then be anonymised and transferred to the West Midlands Regional Genetics Service (WMRGS) for genetic analysis by researchers also named on the research licence. Blastomeres will be lysed there for DNA isolation and genetic analysis, three personnel on the research licence having appropriate laboratory experience and the WMRGS having the required equipment for performing DNA amplification and PCR based haplotype marker analysis.

Embryo usage in the next year is projected at 30 fresh and 30 frozen embryos. The researchers have appropriate experience and are well qualified to perform the programme of research. The premises and equipment are also appropriate and procedures are in place to ensure that patients are treated respectfully. Small improvements can be made in developing procedures to ensure patient consents are not breached and that research governance and the donation to research procedure, comply with the Code of Practice 7th edition, specifically:

- A procedure for reporting serious adverse events to HFEA should be developed to ensure compliance with General Licence Condition A.4.1 and Code of Practice, 7th edition, Standards S.9.4.1 and S.9.4.2.
- It is essential that the research PR ensures that the scoring of embryos to select for freezing for later clinical treatment is not performed by the clinical embryologist on the research licence application, who may have a role in subsequent research use of embryos not selected for freezing.
- The PR should develop a suitable documented procedure for recording and reviewing patient consent, which ensures that patient consent is not breached. If the procedure used for transfer of donated material to project R0173 is used, the PR should take into account recommendations made by the inspectorate after inspection of that project, specifically:

  1) To clearly defined in centre procedures when embryos are entering the research programme and to ensure consents are checked and the donated materials anonymised at the point of transfer to research.

  2) It is important that the research PR and his research assistants only provide information to patients about the HFEA licensed research projects, but do not obtain consent from the patients for donation to them. Consent taking should be performed by staff at Centre 0119 including the research nurse.

- Patient information does not provide contact details for somebody independent of the research with whom patients can discuss donation. It also does not inform patients that they can see a counsellor to discuss the implications if they choose to donate, as required by Code of Practice, 7th Edition, G.6.7.2 (a). This information should be added to the information sheet or provided verbally to the patients.

- Patient information discusses the provision for patients to vary or withdraw their consent up to the point that embryos are passed over to the research laboratory, as required by Code of Practice, 7th Edition, S.8.3.1 and G.5.13.1 (g). It says that this can be achieved by asking any member of staff. It is recommended that the information provides contact details for a named individual through whom this can be achieved, as well as relating that it can be discussed with any member of staff.

The inspectorate recommend the provision of a research licence to this application

Report of Inspection findings

1. **Organisation**

Desired Outcome: The research is well-organised and managed and complies with the requirements of the HFE Act.

Summary of findings from inspection
Evidence of:

- Leadership and management
- Staffing
- Funding
- Organisation of the centre
- Resource management
- Research governance

Staff

Principal investigator	Dr Jackson Kirkman Brown
Scientists	1 ACU director and lead embryologist; 1 embryologist; 1 Research Lecturer
Collaborators	1 lead genetics (FISH) researcher; 1 molecular genetics research. West Midlands Regional Genetics Service
Support staff (receptionists, record managers, quality and risk managers etc)	Quality Manager at Centre 0119 Staff at centre 0119 recruit patients to the research project

Highlighted areas of firm compliance
The proposed Person Responsible (PR) is a Senior Lecturer within the School of Medicine, University of Birmingham, with many years of research experience, and also the Director of Research and Development at the Centre for Human Reproductive Sciences in Centre 0119. The PR is the proposed project lead and PR. The PR shows an understanding of the regulatory requirements of the HFEA and has been PR of project R0173 at Centre 0209 for 2 years. The PR is not the PR of a Treatment and Storage Licence and has completed the PR entry programme. The Nominal Licensee is the PR of the treatment and storage activities at Centre 0119 and has a role in coordinating between the research project and Centre 0119 but no role in carrying out the research. The researchers are well organised and have clear lines of communication and control. All staff on the project are employed by the Birmingham Womens Hospital and/or Birmingham University. They have all been appropriately inducted through programmes at these institutions and for health and safety, fire safety, occupational health etc. They have also undergone local induction courses which cover working in their local laboratories. Birmingham Women's Hospital Trust provides health and safety, human resources, financial, training and other infrastructural support for Centre 0119 and WMRGS staff, including those on the research licence application. CVs have been supplied to the HFEA for all staff on the project. The research project will be funded by internal funds from within Centre 0119 and the WMRGS. Funding from the NHS is being sought.

Resource management and coordination will be achieved through regular meetings between the PR and researchers at WMRGS. These will be minuted. A dedicated research nurse will be in place by mid-September 2008 to facilitate recruitment. Research data will be reported back to Centre 0119 in research seminars by the PR and other researchers. A research day is held annually at Centre 0119 at which the research will be presented.

Laboratory standard operating procedures (SOPs) were provided which included methodology required for preimplantation genetic screening (PGS) and diagnosis (PGD) of chromosomal abnormalities and single gene defects. The proposed PR considered the SOPs include some of the required laboratory methods; other SOPs are in development. The reporting of adverse incidents was discussed and the PR agreed to develop a procedure for the reporting of incidents to the HFEA in line with the requirements of standard S 9.4.1 of the 7th Code of practice (COP).

Issues for consideration
None
Executive recommendations for Licence Committee
None.
Areas not covered in by this inspection
All covered

2. Premises and equipment

Desired Outcome: The premises and equipment are safe, secure and suitable for their purpose.

Summary of findings from inspection:

- Suitability of premises
- Storage facilities
- Safety of equipment
- Servicing and maintenance of equipment

Highlighted areas of firm compliance
The project will be partially undertaken in the clinical embryology laboratory of Centre 0119, where there is a research-dedicated incubator and ICSI microscope to biopsy blastomeres from donated embryos. Blastomeres will be anonymised and transferred to the West Midlands Regional Genetics Service (WMRGS) for genetic analysis. The WMRGS is the largest NHS laboratory for genetic analysis in the United Kingdom, having 100 staff handling 36,000 patient samples per year, and an annual budget of 5.5 million pounds. Blastomeres will be lysed there for DNA isolation and genetic analysis, three personnel on the research licence having appropriate laboratory experience and the WMRGS having the required equipment for performing DNA amplification and PCR based haplotype marker analysis. The laboratory within Centre 0119 is administered by the Assisted Conception Unit and the laboratory facilities, including the research incubator and ICSI microscope, were considered appropriate in the recent HFEA treatment and storage inspection. They should thus be appropriate for this research project. The laboratories at the WMRGS are well equipped and funded and are ISO 2001 certified and CPA accredited. In both laboratories, equipment maintenance and servicing are well provided for and annual health and safety inspection and risk assessment are performed Both laboratories were secure however unlicensed personnel have access to the genetics analysis lab in the WMRGS. This is not problematic as the blastomeres will be lysed there soon after transfer, do not constitute licensed material and will be anonymised prior to transfer from Centre 0119. Embryos stored for clinical treatment and reaching the end of their consented storage period, are a potential source of research material. These embryos are stored in the cryostore dewars at Centre 0119 in a manner considered compliant with the Code of Practice, 7th edition, requirements at the recent treatment and storage inspection of this centres licence. The Centre operate an effective bring forward system which ensures that embryos are not stored beyond their consented storage period.
Issues for consideration
None
Executive recommendations for Licence Committee
None

Areas not covered in by this inspection
All covered

3. Donation of material

Desired outcome: Donors are recruited appropriately and any research carried out on their embryos is in accordance with their consent.

Summary of findings from inspection:

- Recruitment of donors
- Ensuring prospective donors have access to further guidance
- Ensuring prospective donors have time to consider donation properly
- Ensuring patient consent is not breached
- Donor and patient records
- Prevention of coercion of prospective donors

Highlighted areas of firm compliance
Donors will be recruited at Centre 0119 by the research nurse (to be appointed by the end September 2008). Recruitment will be carried out as it has been in the past (e.g. Project R0173). Specifically, written and verbal information regarding the research project is given when the patients attend an information session (the clinical group meeting) to introduce them to the clinic. They are given a tour of the laboratories and clinical facilities at Centre 0119, and briefed by the research PR in his role within Centre 0119 about IVF treatment and research projects. They are advised that research donation will not have any influence on their clinical treatment. Patients have been investigated by the referring clinics by this stage so can sign some clinical consents and the HFEA registration forms at the end of the session. Patients also indicate whether they are interested in research donation on a tick box in their clinical consent forms but are told by the research PR that this is not a commitment. The patients next attend a consultation during which they sign specific HFEA treatment consent forms and discuss their treatment plan, after which they can discuss research consent with the research nurse or a researcher, and are provided with further information. Patients then undergo down-regulation and attend for ultrasound scanning, after which they discuss research consent in the counselling room with the research nurse, or a researcher, and sign consent forms if they choose to donate to research. The researchers used to discuss research or consenting with patients have attended local Trust training for consenting patients. In this recruitment procedure, research consent is obtained before the treatment cycle is started, i.e. long before egg collection, but several weeks after information is first supplied. Patients are also provided with multiple opportunities to obtain further information about the research. Consent is therefore informed and there is enough time for it to be well considered. The inspectorate consider the proposed patient information is balanced and non-coercive. Centre 0119 has selection criteria in place for patients to donate embryos to research. If they have signed a research consent, all patients who choose not to freeze embryos for treatment will be approached about their use in research, as will all patients with embryos defined as unacceptable for freezing due to deviation from defined morphological criteria required by the Centre for embryos to be frozen for later treatment. Patients with cryopreserved embryos will be approached if they request research information in response to their annual letter asking what they wish to do with their stored embryos. They will be provided patient research information and a consent form and offered the opportunity to discuss donating with a researcher, on the telephone or in person, if they so wish. The embryos of patients who send back completed consent forms will be taken into the research

programme as they approach the end of their consented storage period.

Issues for consideration

- It is essential that the research PR ensures that the scoring of embryos to select for freezing for later clinical treatment is not performed by the clinical embryologist on the research licence application, who may have a role in subsequent research use of embryos not selected for freezing.

- The PR should develop a suitable documented procedure for recording and reviewing patient consent, which ensures that patient consent is not breached. If the procedure used for transfer of donated material to project R0173 is used, the PR should take into account recommendations made by the inspectorate after inspection of that project, specifically:

  1) To clearly defined in centre procedures when embryos are entering the research programme and to ensure consents are checked and the donated materials anonymised at the point of transfer to research.

  2) It is important that the research PR and his research assistants only provide information to patients about the HFEA licensed research projects, but do not obtain consent from the patients for donation to them. Consent taking should be performed by staff at Centre 0119 including the research nurse.

Executive recommendations for Licence Committee

The Licence Committee is asked to endorse the recommendations made in relation to the areas for consideration cited above.

Areas not covered in by this inspection

All covered

4. Patient information and consents

Desired outcome: Patients are provided with appropriate information which allows them to give informed consent.

Summary of findings from inspection:

- Patient information
- Consent forms
- Patient information for projects deriving embryonic stem cells
- Consent forms for projects deriving embryonic stem cells

Highlighted areas of firm compliance
Patient information and consent forms for the proposed project were assessed by the inspectorate. They were compliant with the Code of Practice, 7th edition, except where noted below.
Issues for consideration
• Patient information does not provide contact details for somebody independent of the research with whom patients can discuss donation. It also does not inform patients that they can see a counsellor to discuss the implications if they choose to donate, as required by Code of Practice, 7th Edition, G.6.7.2 (a). This information should be added to the information sheet or provided verbally to the patients. • Patient information discusses the provision for patients to vary or withdraw their consent up to the point that embryos are passed over to the research laboratory, as required by Code of Practice, 7th Edition, S.8.3.1 and G.5.13.1 (g). It says that this can be achieved by asking any member of staff. It is recommended that the information provides contact details for a named individual through whom this can be achieved, as well as relating that it can be discussed with any member of staff.
Executive recommendations for Licence Committee
The Licence Committee is asked to endorse the recommendations made in relation to the areas for consideration cited above.
Areas not covered in by this inspection
All covered

5. Scientific practice

Desired outcome: Research is carried out in accordance with licence conditions and makes progress towards achieving stated aims

Summary of:

- Peer review

Summary

The project is proposed for licensing for the following defined purposes

promoting advances in the treatment of infertility *Human Fertilisation and Embryology Act 1990 Sch 2 3(2)(a)*
increasing knowledge about the causes of miscarriages *Human Fertilisation and Embryology Act 1990 Sch 2 3(2)(c)*
developing methods for detecting the presence of gene or chromosome abnormalities in embryos before implantation *Human Fertilisation and Embryology Act 1990 Sch 2 3(2)(e)*
increasing knowledge about the development of embryos *Human Fertilisation and Embryology (Research Purposes) Regulations 2001 s2(a)*

Estimated usage in the next year:

Material	Expected usage
Fresh Eggs (all immature)	0
Frozen Eggs	0
Failed to Fertilise Eggs	0
Fresh Embryos	30
Frozen Embryos	30

Two peer reviews were requested and both considered the project should be accepted without change, albeit the second was after some discussion (see below)

Project objectives

How the work undertaken relates to the objectives.

Through a better understanding of early genetic screeing of the embryo we can hope to both better understand causes of miscarriage and the early stages of embryo development and also gain knowledge for treatment and diagnosis of the same. As part of our study we will repeatedly sample blastomeres from an embryo and screen for the number of chromosomes and, or other genetic mutations. This should enable us to better clarify the 'mosaicism' observed in the early embryo which currently confounds accurate pre-implantation diagnosis of conditions such as aneuploidy.

Research project.

ABSTRACT

The project aims to develop and validate genetic screening procedures that can be used on

the pre-implantation embryo. We will utilise embryos donated by patients attending for infertility treatment at the Assisted Conception Unit, Birmingham Women's Hospital.
The donated embryos fall into three categories (1) fresh embryos surplus to treatment, (2) fresh embryos unsuitable for treatment (3) frozen embryos no longer required for treatment. All these embryos would otherwise be disposed of. No embryos will be specifically created for this project and the patient always has the choice to donate to another couple.

Embryos will be cultured to the four or six cell stage before being biopsied; repeated biopsies will then occur over a number of days maintaining the embryo as a two to four cell embryo for a week. The blastomeres will be analysed by FISH for aneuploidy and, or PCR haplotyping. After seven days the embryo will be allowed to develop to blastocyst stage. These blastocysts will be examined again as above via trophectoderm and whole blastocyst spread to confirm results. The patient population attending the Assisted Conception Unit is particularly ethnically diverse - in 2005, 37% of the Birmingham population was from an ethnic minority. As it is known that amongst the Birmingham birarderies there are many rare and severe genetic phenotypes due do consanguinity, testing for these will also be developed.

PROPOSAL
Preimplantation screening of the human embryo has advanced considerably over the last decade. Although technologies have moved on there is still a fundamental problem with whether the single blastomere removed is representative of the entire embryo. To this end techniques such as aneuploidy screening have become mired in controversy. In order to realise the screening potential of embryo biopsy new techniques need to be developed that take a more representative sample. It is well established that the early mammalian embryo can be subdivided many times and all blastomeres will continue to develop healthily to term. Using this knowledge we have decided that a repeated biopsy process on the embryo is an excellent way to examine many cells derived from the initial divisions – much reducing the chance of a non-representative result. Final analysis of blastocysts formed at the end of this process will allow us to validate these results, also meeting the criteria for bringing this technology to use in clinical treatment, thus ensuring a seamless translation from the laboratory to clinical use.

Work at Birmingham offers a unique opportunity for many genetic analyses as the West Midlands Regional Genetics Service is part of the same NHS foundation trust and has the full array of latest testing services available. As it is performing tests on patients that may currently be referred elsewhere for PGD/PGS it has all the testing and expertise readily available. This is particularly crucial as the patient population attending the ACU is particularly ethnically diverse with only 63% White British (c.f. 84.1% nationally) and 20.4% Asian, 6.6% Black, 3.1% mixed and 1.1% Chinese (Office for National Statistics, 2005). In the year 2007, our South Asian population attending the ACU had risen to above 35%, reflecting a further shift in the local demographic and associated different spread of genetic disease. We are particularly aware of the importance of this a s many of our Asian patients are from specific biradaris with consanguineous-related problems.

The ACU is currently working towards offering a PGD/PGS service and is applying in tandem for a treatment license, we have also applied for an embryonic stem cell derivation licence and believe that ‘disease’ lines generated from our embryos will be an important future tool in research into these conditions.

METHODS

The main aim of this work is to assess the effects of multiple-time embryo biopsy as a method of reducing chances of misdiagnosis due to embryo genetic mosaicism.

Alongside this these results and testing data will provide the platform for development and validation of the PGS / PDS testing services that Birmingham Women's will offer under the treatment licences.

As a part of the final testing regime all embryos will be totally disrupted for analysis leaving no viable cells.

Peer Review

The research licence application was sent out for peer review to two persons in the research area. The first peer reviewer recommended acceptance of the application immediately. The second reviewer had some queries, which were resolved after written exchanges between the reviewer and the PR. The second reviewer said to accept the application without changes but with the proviso that the exchanges were provided to the Licence Committee. Full peer reviews are appended to this report

Issues for consideration

NONE

Executive recommendations for Licence Committee

NONE

Areas not covered on this inspection

NONE

Report compiled by:

Name Andrew Leonard

Designation HFEA inspector

Date 12th August 2008

Appendix A: Centre Staff interviewed

PR and 2 others

Appendix B:

RESPONSE OF PERSON RESPONSIBLE TO INSPECTION REPORT

Centre Number 0119

Name of PR Jackson Kirkman-Brown

Date of Inspection 18th July 2008

Date of Response 15th August 2008

Please state any comments regarding the inspection and actions you have taken or are planning to take following the inspection with time scales

I will take action across all issues highlighted for consideration.

- We understand that decisions on clinical treatment must be clearly separated from research or any potential benefit. Before the work commences formal SOPs will be agreed and actioned with Dr Sue Avery (PR for the treatment licence at 0119) that will ensure that this is the case. These will also clearly guide that the embryos must not be scored by the embryologist who will later undertake the first research biopsy. Our laboratory documentation will be amended in-line with this so that a clear record of this being observed is available for inspection.

- Embryos will enter the research program at the stage they are no longer for patient treatment – either because the couple do not wish to freeze them or because they do not comply with criteria for freezing. This will normally be immediately after embryo transfer. The embryologist performing the embryo transfer will therefore provide final confirmation from theatre, after checking the notes, that the couple have not withdrawn from the research project. After performing this check they will pass a confirmation slip, witnessed within theatre, with patient details and anonymisation code back to the laboratory. At this stage the embryos will be deemed to have entered the research pathway and be transferred to an anonymised dish in the research incubator.

- Patient information will be amended as suggested. The information has already been approved by our local REC so we will provide them and the HFEA with information

including this amendment.

- We are currently drafting a procedure for reporting serious adverse incidents and will have this in place before commencing further work. All persons working in the research team / Genetics laboratories will sign to confirm they have read and understood this procedure.

2. Correction of factual inaccuracies

Please let us know of any factual corrections that you believe need to be made (NB we will make any alterations to the report where there are factual inaccuracies. Any other comments about the inspection report will be appended to the report).

Research Licence Committee Meeting

16 September 2008
21 Bloomsbury Street London WC1B 3HF

MINUTES Item 3

Research Project RO186: Genetic screening of the preimplantation embryo based at the Centre for Human Reproductive Science, the Assisted Conception Unit, Birmingham Women's Hospital
Initial licence application

Members of the Committee:	In Attendance:
Emily Jackson, Lay Member – Chair	Chris O'Toole, Head of Research Regulation
Richard Harries, Lay Member	Claudia Lally, Committee Secretary
Clare Brown, Lay Member	
Neva Haites, Professor of Medical Genetics, University of Aberdeen	Providing Legal Advice to the Committee: Sarah Ellson, FFW Solicitors

Declarations of Interest: Clare Brown informed the Committee that the Nominal Licensee for this project has been appointed a member of the board of trustees for the organisation for which she is Chief Executive: INUK. Ms Brown therefore left the room and did not participate in this item. Other members of the Committee declared that they had no conflicts of interest in relation to this item. The following papers were considered by the Committee:

- papers for Licence Committee (72 pages)
- no papers were tabled.

1. The papers for this item were presented by Chris O'Toole, Head of Research Regulation. Dr O'Toole described the aims of this proposed project, which are to establish clear and safe techniques to make accurate genetic diagnoses in early embryos.

2. Dr O'Toole summarised the findings of the renewal inspection visit, which took place on 18 July 2008. She informed the Committee that the project was based across two centres, with the culture and biopsy of the embryos taking place at centre 0119 and the blastomeres being transferred to the West Midlands Regional Genetics Service for genetic analysis.

3. Dr O'Toole summarised the findings of the inspection report, stating that the researchers have appropriate experience and qualifications and the premises and equipment are also appropriate. She reported that a number of areas for improvement were identified at the inspection, namely:
   - a procedure for reporting serious adverse events should be developed
   - the centre must ensure that the research PR must not be involved in the selection of embryos for freezing for later clinical treatment
   - the Person Responsible should develop a suitable documented procedure for recording and reviewing patient consent, to ensure that this consent is not breached
   - the Person responsible should ensure that patients are informed that they can see a counsellor to discuss the implications if they choose to donate
   - patient information should provide contact details for a named individual in case patients want to withdraw consent.

4. Dr O'Toole discussed the Person Responsible's response to these findings, as appended at page 15 and 16 of the inspection report. This response states the Person Responsible's intention to address all of the above issues.

5. Dr O'Toole informed the Committee that the Executive has now received signed confirmation that the project has Local Research Ethics Committee approval. She also confirmed that the Person Responsible has satisfactorily completed his Person Responsible Entry Programme (PREP) assessment.

6. Dr O'Toole discussed the peer reviews of the application. The first reviewer suggested that the project should be accepted in its current form, for the following research purposes:

   - to promote advances in the treatment of infertility
     Human Fertilisation and Embryology Act 1990 Sch 2 3(2)(a)

   - to increase knowledge about the development of embryos
     Human Fertilisation and Embryology (Research Purposes) Regulations 2001 s2(a)

   The second peer reviewer initially suggested that the application be rejected, but then changed his position and recommended that the project be accepted in its current form, subject to his comments being made available to the Committee. The second peer reviewer subsequently confirmed that the research is necessary or desirable for the following research purposes:

   - to increase knowledge about the causes of miscarriage
     Human Fertilisation and Embryology Act 1990 Sch 2 3(2)(c)

   - to develop methods for detecting the presence of gene or chromosome abnormalities in embryos before implantation

Human Fertilisation and Embryology Act 1990 Sch 2 3(2)(e)

- to increase knowledge about the development of embryos
  Human Fertilisation and Embryology (Research Purposes) Regulations 2001 s2(a).

The Committee's Decision

7. The Committee noted the response from the Person Responsible, who states that action will be taken on all the issues highlighted for consideration, and that patient information will be amended to add a named individual for donors to contact if they want to withdraw their consent.

8. The Committee noted that both peer reviewers agreed that the research is directed at important issues but also noted that the second reviewer questioned the proposed methodology. In the light of the comments by that reviewer, the Committee considered the proposed methodology and concluded that the research project does offer a valid methodological approach to its subject matter, particularly in its aim to take sequential biopsies of embryos to gain an understanding of how screening may be made more representative.

9. The Committee applied the statutory tests in considering the application. To start, the Committee identified the activities under consideration as the storage of embryos and the use of donated embryos for research. The Committee agreed that these activities are not prohibited under the Human Fertilisation and Embryology Act 1990.

10. The Committee agreed that the activities are necessary or desirable for the following specified purposes:

    - to promote advances in the treatment of infertility
      Human Fertilisation and Embryology Act 1990 Sch 2 3(2)(a)

    - to develop methods for detecting the presence of gene or chromosome abnormalities in embryos before implantation
      Human Fertilisation and Embryology Act 1990 Sch 2 3(2)(e)

    - to increase knowledge about the development of embryos
      Human Fertilisation and Embryology (Research Purposes) Regulations 2001 s2(a)

    In making this decision, the Committee took account of the fact that the research project aims to understand the growth of embryos up to 14 days and to establish clear and safe techniques to make accurate genetic diagnoses in

early embryos. The Committee also took into account the comments by the first peer reviewer that chromosomal mosaicism in early human embryos is a major cause of embryonic death and that a good outcome from this project would provide the IVF and PGD communities with useful background information regarding the importance of genetic mosaicism.

11. The Committee agreed that they were satisfied that the proposed research could not be undertaken without the use of human embryos. In making this decision the Committee took into account the comment by the first peer reviewer that experiments on animal models or human somatic cells are not relevant to the unique situation observed in cleavage-stage human embryos.

12. The Committee agreed that they were satisfied with the patient information and consent forms other than the occurrence of a number of grammatical errors. They asked that the Executive work with the centre to address these.

13. The Committee noted that the centre had paid its licence fee and decided to grant a 3 year licence with no conditions.

Signed…… … Date……..
Emily Jackson (Chair)