云南省第一人民医院医学伦理委员会
科研伦理分委员会伦理审查批件

批件编号	KHLL2020-KY064		
研究项目名称	人胚胎早期发育和多能性调控机制研究		
申办单位/科室	省一院		
项目负责人	相立峰	项目来源	云南省生殖遗传病临床医学中心、昆明理工大学灵长类转化医学研究院
审查方式	□会议审查 ☑快速审查		
审查日期	2020 年 12 月 18 日（初审）、2021 年 1 月 7 日（复审）		
审查文件	1、伦理审查申请书 2、项目申请书 3、研究方案（V1.1,版本日期：2020.6.17） 4、知情同意书（V1.3,版本日期：2020.12.25） 5、研究者简历 6、研究者承诺书 7、同意捐赠胚胎用于科研声明		

审查意见

1. 本伦理委员会对该研究项目的审查决定如下（在□内打 √）

☑同意 □作必要修改后同意 □作必要修改后重审

□不同意 □终止或暂停

2. 对研究方案/受试者知情同意分别给出以下评审意见或建议：

☑方案设计合理，可行。

☑知情同意符合伦理要求。

3. 审查频度为研究批准之日起 ：□3 个月 □6 个月 ☑1 年

4. 伦理委员会有根据实际进展情况改变持续审查频率的权利。

注意事项：

1. 实施过程中如出现任何不良反应，请申请人及时向伦理委员会提交不良事件书面报告。

2. 研究者如果没有遵从方案开展研究，可能对受试者的权益或健康及研究的科学性造成不良影响，请申请人提交违背方案报告。

3. 暂停或提前终止研究等情况，请及时向伦理委员会提交暂停/终止研究报告。

4. 本批件自签发之日起生效，请按照伦理委员会规定的跟踪审查频率，在截止日期前 1 个月提交项目年度进展报告。

5. 试验结束，请及时提交结题报告。

主任委员/主席（或授权人）签名：

云南省第一人民医院医学伦理委员会（盖章）

日期：2021 年 1 月 8 日

声明：本伦理委员会是独立的，组成和工作程序符合国家相关法律法规。

自愿捐赠胚胎用于人胚胎早期发育和多能性调控机制研究知情同意书

我们将要开展一项人类胚胎早期发育及多能性调控机制的研究工作,您的具体情况符合该项目的入组条件，因此，我们想邀请您参加该项研究。我们将向您介绍该研究的目的、经费来源、主要研究者、研究内容、研究获益和风险等，请仔细阅读后慎重作出决定是否参加该研究。当工作人员向您说明和讨论时，您可以随时提问并让工作人员向您解释不清楚的地方。

1. 为何要使用捐赠胚胎用于科学研究？

人胚胎早期发育的研究及多能干细胞的调控机制探索，对理解生命的起源、揭示胚胎发育机制、未来提高辅助生殖成功率以及促进多能性细胞分离培养提供重要的理论基础，完成这些工作需要用到患者自愿捐赠的胚胎。

2. 本研究标本使用的范围、目的、时限及处置方法

标本使用范围包括胚胎体外延迟培养体系的建立、不同类型多能性细胞的分离培养，不同阶段的胚胎单细胞转录组、组蛋白、甲基化、代谢组学等相关研究；研究目的是分析不同基因、信号通路及表观遗传修饰在胚胎发育过程中所起的作用；研究时限为自伦理委员会批准之日起 3 年；胚胎仅用于体外研究，绝不用于移植等其他用途，所有研究后样本均经医学销毁。

3. 本研究的项目经费预算及来源？

总经费预算 39.88 万元，由云南省生殖遗传疾病临床医学中心和昆明理工大学灵长类转化医学研究院共同资助。

4. 参与本研究的科研工作者有哪些？

本研究参与者包括昆明理工大学教授 1 人，博士后 1 人，博士研究生 1 人，硕士研究生 1 人；云南省第一人民医院副主任医师 1 人，主治医师 1 人，主管技师 2 人，博士研究生 1 人。

5. 哪些患者参与本项研究？

在成功生育后代之后，夫妻双方自愿捐赠剩余的冷冻胚胎。

6. 参加本研究有什么风险？

捐赠的胚胎仅用于科学研究，没有任何额外风险。

7. 参与本研究的样本数量

本研究拟收集 300 枚以内胚胎，如果在研究过程中数量不够，则会适当增加入组样本数。

8. 是否必须参与本研究？

不是，是否参与完全取决于病人自己的意愿，可以与家人、主治医生讨论后再做决定。如果不愿意，可以拒绝参与，对病人目前或者未来的医疗活动不会有任何影响。在胚胎使用之前，病人可以随时废除胚胎的捐献。

9. 自愿要求医学处理但不同意用于科研的胚胎如何处理？

由两名以上医务工作人员共同进行医学处理（销毁），绝不用于科研。

10. 参与本研究的获益及经济补偿是什么？

您不会因参与本研究有直接获益，您的参与有助于阐明胚胎早期发育和多能性调控机制，为揭示生命科学奥秘作出贡献，没有任何经济补偿或其他任何形式的报酬。

11. 个人信息是保密的吗？

所有的个人信息和资料都保密，每个胚胎的编号名字等信息全部去除标记后再进行科学研究，所有研究人员和相关方都会按照要求进行信息的保密。除了相关研究人员，任何人无法观察到科学研究的数据。

12. 本研究怎样监管？

胚胎用于干细胞及胚胎早期发育研究，必须符合我国的法规和伦理原则，决不用于人类嵌合体胚胎、基因编辑、克隆人及体外培养超过14天等违反医学伦理学的实验研究。研究符合国家科技部、卫生部2003年12月24日颁发的2003460号文件《人胚胎干细胞研究伦理指导原则》、国际干细胞研究学会2016年颁布的《干细胞研究和临床转化指南》以及中华人民共和国国务院令第717号《中华人民共和国人类遗传资源管理条例》，医学伦理委员会将定期审查研究工作。

13. 如果有问题或困难与谁联系？

如果有与本研究相关的任何问题，可以联系您的主治医师，或者相立峰，0871-63647723。

我们已经阅读并与工作人员共同讨论了以上内容，对其中的相关问题进行了询问并得到了解答。我们已经充分知情，并自愿捐赠受精后第____天新鲜/冷冻胚胎____个。相关研究人员有权使用我们的胚胎进行科学研究。

研究者承诺

不论您是否同意参加本研究，我们都将提供最好的医疗服务。

捐赠的胚胎仅用于科学研究，不做他用。

您参与研究的部分数据将以科研论文的形式发表，不会写进任何个人信息。

为保护个人隐私，所有关于您的任何治疗信息都严格保密。

丈夫（签字）：____________ 日期 ______年____月____日

妻子（签字）：____________ 日期 ______年____月____日

医生（签字）：____________ 日期 ______年____月____日

Medical Ethics Committee of the First People's Hospital of Yunnan Province

Ethical Review Approval Document of Scientific Research Ethics Sub-Committee

<table>
<tr><td>Approval No.</td><td colspan="3">KHLL2020-KY064</td></tr>
<tr><td>Study/Project Name</td><td colspan="3">Study on the Regulation Mechanism of Early Development and Pluripotency of Human Embryo</td></tr>
<tr><td>Sponsored by</td><td colspan="3">The First People's Hospital of Yunnan Province</td></tr>
<tr><td>Project Principal</td><td>Xiang Lifeng</td><td>Project Source</td><td>Yunnan Clinical Medical Center for Reproductive and Genetic Diseases, Institute of Primate Translational Medicine of Kunming University of Science and Technology</td></tr>
<tr><td>Method of Review</td><td colspan="3">☐ Meeting Review ☑ Quick Review</td></tr>
<tr><td>Date of Review</td><td colspan="3">December 18, 2020 (preliminary review), January 7, 2021 (review)</td></tr>
<tr><td>Documents for Review</td><td colspan="3">1. Application for ethical review; 2. Project application; 3. Study protocol (V1.1, version date: June 17, 2020); 4. Informed consent form (V1.3, version date: December 25, 2020); 5. Resume of investigators; 6. Investigators' commitment; 7. Statement of consent to donate embryos for scientific research</td></tr>
</table>

Review Comments

1. The review decision of the Ethics Committee on the research project is as follows (tick ✓ in the ☐)

☑Approved ☐Approved after necessary amendments ☐Review after necessary modification

☐Not approved ☐Terminate or suspend

2. Comments and suggestions on the study protocol and the subject ICF are as follows:

☑The design of the protocol is reasonable and feasible.

☑The informed consent form meets ethical requirements.

3. Review frequency from the approval date: ☐3 months ☐6 months ☑1 year

4. The Ethics Committee reserves the right to change the frequency of continuous review based on actual progress.

Notes:

1. In case of any adverse reaction during implementation, the applicant shall submit a written report of adverse events to the Ethics Committee in time.

2. Where the investigators fail to conduct the study following the protocol, which may adversely impact the health and rights & interests of subjects and the scientificity of the study, a protocol violation report shall be submitted by the applicant.

3. In case of suspension or early termination of the study, the report on study suspension/termination is required to be submitted to the Ethics Committee in time.

4. This approval is effective from the date of issuance. Please submit the annual progress report of the project one month before the deadline according to the follow-up review frequency specified by the Ethics Committee.

5. Please submit the final report in time after the trial.

Signature of Chairman Member/Chairman (or authorized representative):	Medical Ethics Committee of the First People's Hospital of Yunnan Province (sealed) Medical Ethics Committee of the First People's Hospital of Yunnan Province (sealed) Date: January 8, 2021

Statement: The Ethics Committee is independent, and the composition and operation procedures of the Ethics Committee are compliant with the relevant national laws and regulations.

THE TRANSLATORS ASSOCIATION OF YUNNAN PROVINCE 云南省翻译工作者协会 SEAL FOR TRANSLATION 5301000040549

Informed Consent Form of Voluntary Donation of the Embryo Used for Study on the Regulation Mechanism of Early Development and Pluripotency of Human Embryo

We are going to conduct a study on the regulation mechanism of early development and pluripotency of human embryos. Your specific situation is suitable for the project's enrollment requirements, so we would like to invite you to participate in the study. We will introduce the purpose, funding source, principal investigator, content, benefits, and risks of the study to you. Please read these carefully and decide prudently whether to participate in the study. When the staff explains these and discusses with you, you could ask questions and let the staff explain the unclear points to you at any time.

1. **Why are donated embryos used for scientific research?**

   The study on the early development of human embryos and the exploration of the regulatory mechanism of pluripotent stem cells can provide a significant theoretical basis for understanding the origin of life, revealing the embryonic development mechanism, improving the success rate of IVF in the future, and promoting the isolation and culture of pluripotent cells. To accomplish these works, embryos voluntarily donated by patients were required.

2. **The scope, purpose, time limit and disposal methods of specimens in this study**

   The application scope of specimens includes the establishment of delayed culture system of embryos in vitro, the isolation and culture of different types of pluripotent cells, and the related research of embryonic single-cell transcriptome, histone, methylation, metabolomics at different stages. The purpose of this study is to analyze the role of different genes, signal pathways, and epigenetic modifications in embryonic development. The study time limit is 3 years from the date of approval by the Ethics Committee. Embryos are only used for in vitro research and never for other purposes such as transplantation. All samples after the study will be destroyed by medical treatment.

3. **What is the project budget and source of this study?**

   The total budget of this study is RMB 398,800, which is jointly funded by Yunnan Clinical Medical Center for Reproductive and Genetic Diseases and Institute of Primate Translational Medicine of Kunming University of Science and Technology.

4. **Who are the investigators involved in this study?**

   Participants in this study include one professor, one postdoctoral fellow, one Ph.D. candidate and one master degree candidate of Kunming University of Science and Technology; and one deputy chief doctor,

香丽萍 胡玲玲

one attending physician, two technicians in charge, and one Ph.D. candidate of the First People's Hospital of Yunnan Province.

5. Who participates in this study?

The remaining frozen embryos voluntarily donated by both husband and wife after successful childbirth.

6. What are the risks of participating in this study?

The donated embryos are used only for scientific research and there are no additional risks.

7. Number of samples participating in this study

It is planned to collect less than 300 embryos in this study. If the number is not enough during the study, the number of samples will be appropriately increased.

8. Is it necessary to participate in this study?

No, participation entirely depends on the patient's own willingness and can be determined after discussing with the family and the attending doctor. If you don't want to join in it, you can refuse to participate, and there will be no impact on the patient's current or future medical activities. The patient can abolish the donation of the embryo at any time before the embryo is used.

9. How to deal with embryos that voluntarily require medical treatment instead of agreeing to be used in the research?

The embryos are jointly treated (destroyed) by two or more medical staff, and never used for scientific research.

10. What are the benefits and financial compensation of participating in this study?

You will not benefit directly from participating in this study. Your participation helps to elucidate the regulatory mechanism of early embryo development and pluripotency, and contribute to revealing the mysteries of life science. There is no financial compensation or any other form of remuneration.

11. Is personal information confidential?

All personal information and materials are kept confidential, and the information such as the number and name of each patient is completely removed before scientific research is performed. All investigators and related parties will keep the information confidential as required. No one can access the data of scientific research except the relevant investigators.

12. How is this study regulated?

Embryos for stem cell and early embryo development studies must comply with Chinese laws and ethical principles, and should never be used in experimental research that violates medical ethics, such as human chimera embryos, gene editing, human cloning, and in vitro culture for more than 14 days. This study conforms to the *Ethical Guiding Principles of Human Embryonic Stem Cell Research* (No.2003460) issued by the Ministry of Science and Technology and the Ministry of Health on December 24, 2003, the *Guidelines for Stem Cell Research and Clinical Translation* issued by the International Society for Stem Cell Research in 2016, and the *Regulation of the People's Republic of China on the Administration of Human Genetic Resources* issued by Order of the State Council of the People's Republic of China (No. 717). The Medical Ethics Committee will regularly examine the work of this study.

13. Who can I contact if any problem or difficulty?

If you have any questions related to this study, you can contact your attending doctor or contact Xiang Lifeng at 0871-63647723.

We have read and discussed the above with the staff, and we have asked about and got the answer to the relevant questions in it. We are fully informed and voluntarily donate ______ fresh/frozen embryos on the ______ day after fertilization. The related investigators have the right to use our embryos for scientific research.

Investigators' Commitment

Whether you agree to participate in this study or not, we will provide the best medical services.

The donated embryos are used only for scientific research and not for other purposes.

Some of the data of the study which you participate in will be published in the form of research papers and will not be written into any personal information.

To protect your privacy, all treatment information about you is strictly confidential.

Husband (signature): ________________ Date______(YY)______(MM)______(DD)

Wife (signature): ________________ Date______(YY)______(MM)______(DD)

Doctor (signature): ________________ Date______(YY)______(MM)______(DD)

THE TRANSLATORS ASSOCIATION OF YUNNAN PROVINCE 云南省翻译工作者协会 SEAL FOR TRANSLATION 翻译专用章 5301000400

翻译：胡玲玲