Directions:

1 – Highlight areas which confuse you and about which you want clarification.

2 – Demonstrate evidence of a close reading, by providing reactions, questions, and mini-summaries

**Scientists seek permission to genetically modify embryos**

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Analysis: By Helen Briggs, Health Editor, BBC News Online

UK scientists are seeking permission to genetically modify human embryos for the first time.

Researchers at The Francis Crick Institute in London want to use a controversial genetic technique to carry out research into infertility.

The embryos would be destroyed after the research and not implanted into the womb.

The government's fertility watchdog said it had received the application, which would be looked at in due course.

In the UK, it is illegal to use gene editing of embryos in IVF treatment, but it is permissible for research purposes, under a licence.

"We have recently received an application to use Crispr/Cas9 (gene editing) in one of our licensed research projects, and it will be considered in due course," said a spokesperson for the Human Fertilisation & Embryology Authority (HFEA).

When scientists in China announced they had genetically modified human embryos in a world first earlier this year, there was an outcry.

The embryos were never destined for use in IVF, but there were concerns the work could be a slippery slope towards designer babies.

The technique - known as gene editing - can make precise changes to DNA. But any alterations would be passed on to future generations if the embryos were ever to be used in human reproduction.

It would be illegal to do this under British law, although it is permissible to use the technique for research purposes, where the embryos are eventually destroyed. The Francis Crick Institute is the first to apply for a research license, making it something of a test case.

The researchers want to use the technique to look at the earliest stages of human development, in the hope of better understanding why some women have miscarriages.

The HFEA will now consider the application, but no decision is expected for some weeks or months. Most scientists agree that genome editing should not be used for reproductive purposes at present. But they say this is not a reason to block research.

**'Foolish'**

Research leader, Dr Kathy Niakan, said the aim was to understand the genes that human embryos need to develop successfully.

"Importantly, in line with HFEA regulations, any donated embryos would be used for research purposes only," she said.

"These embryos would be donated by informed consent and surplus to IVF treatment."

Group leader of the institute, Prof Robin Lovell-Badge, added that any use of the technique for altering the genes of embryos intended for reproduction would be "foolish" at this stage.

"We are fortunate to have good regulations in the UK that permit research with a licence, but not the implantation of any embryo that has had its genome modified," he said.

**Moratorium**

Scientists say the new technique, called Crispr/Cas9, means that genomes can be manipulated in a more precise way than before.

However, there have been calls for a moratorium on such research, amid moral and ethical concerns.

Earlier this year, Chinese scientists announced that they had genetically manipulated human IVF embryos for research purposes in a landmark study.

The US later imposed a moratorium on federally-funded research in this area.

In the UK, experts recently called for debate on whether editing human embryos would ever be justified in the clinic.

Weeks later a group of influential scientists belonging to the Hinxton Group said it did not approve of GM babies being born yet, but the idea might one day become morally acceptable.

Dr Sarah Chan of the University of Edinburgh said the news that UK scientists had applied to the HFEA for a licence to perform genome editing research using embryos should be cause for confidence, not concern.

"UK scientists are poised to make a world-leading contribution to this exciting field," she said.

"At the same time, we should be reassured to know that this work is being carried out under a robust regulatory scheme that ensures high scientific and ethical standards."

Write three one-paragraph reflections, each one placing the issue in a different context. Label each paragraph according to its context. Choose from the list of contexts below:

Cultural Health & Safety Social

Academic Generational Economic

Historical Religious Environmental

Political Moral Medical

Gender Legal Self-expression