# **DS Type Mines-Ponts (1h30)**

# **EXPRESSION ECRITE**

# **First Human Embryos Edited in U.S.**

## *Researchers have demonstrated they can efficiently improve the DNA of human embryos.*

The first known attempt at creating genetically modified human embryos in the United States has been carried out by a team of researchers in Portland, Oregon. The effort involved changing the DNA of a large number of one-cell embryos with the gene-editing technique CRISPR, according to people familiar with the scientific results.

In altering the DNA code of human embryos, the objective of scientists is to show that they can eradicate or correct genes that cause inherited disease, like the blood condition beta-thalassemia. The process is termed “[germline engineering](https://www.technologyreview.com/s/535661/engineering-the-perfect-baby/" \t "_blank)” because any genetically modified child would then pass the changes on to subsequent generations via their own germ cells—the egg and sperm.

Although none of the embryos were allowed to develop for more than a few days—and there was never any intention of implanting them into a womb—the experiments are a milestone on what may prove to be an inevitable journey toward the birth of the first genetically modified humans.

Some critics say germline experiments could open the floodgates to a brave new world of “designer babies” engineered with genetic enhancements—a prospect bitterly opposed by a range of religious organizations, civil society groups, and biotech companies. The U.S. intelligence community last year called [CRISPR a potential "weapon of mass destruction.”](https://www.technologyreview.com/s/600774/top-us-intelligence-official-calls-gene-editing-a-wmd-threat/)

The advisory committee drew a red line at genetic enhancements—like higher intelligence. “Genome editing to enhance traits or abilities beyond ordinary health raises concerns about whether the benefits can outweigh the risks, and about fairness if available only to some people,” said Alta Charo, co-chair of the NAS’s study committee and professor of law and bioethics at the University of Wisconsin–Madison.

In the U.S., any effort to turn an edited embryo into a baby has been blocked by Congress, which added language to the U.S. Food & Drug Administration funding bill forbidding it from approving clinical trials of the concept.

Despite such barriers, the creation of a gene-edited person could be attempted at any moment, including by clinics operating facilities in countries where there are no such legal restrictions.

Adapted from *MIT Technology Review*, July 26 2017

1. **What is “germline engineering“ and what are the advantages of this technique ? (80 words, +/- 10%)**
2. **Do you agree that genetic engineering is a “potential weapon of mass destruction“ ? Discuss using concrete examples. (180 words, +/- 10%).**

**THEME**

Lucette en était à sa huitième heure d’insomnie. Dans son ventre, le bébé bougeait beaucoup depuis la veille. Toutes les quatre ou cinq secondes, un sursaut gigantesque secouait le corps de cette fillette de dix-neuf ans qui, un an plus tôt, avait décidé de devenir épouse et mère.

Le conte de fées avait commencé comme un rêve : Fabien était beau, il se disait prêt à tout pour elle. La famille, perplexe et émue, avait vu ces deux enfants mettre leurs habits de noces. [...]

Peu à peu, les choses étaient devenues moins magiques. Fabien et Lucette se disputaient souvent. Lui qui avait été si heureux de sa grossesse lui disait à présent :

-Tu as intérêt à cesser d’être folle quand le petit sera là !

Pourtant elle était sûre de ne pas être folle. Elle voulait seulement que chaque jour, chaque année, lui apporte le maximum.

Amélie Nothomb, *Robert des noms propres*

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