

PRESS RELEASE

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Application of germline editing currently not ethically justifiable

The birth of two genetically modified girls claimed on Monday, 26 November 2018, by the Chinese researcher Jiankui He by means of germline editing represents a serious violation of ethical obligations according to the view of the German Ethics Council.

The application of new genome editing methods such as CRISPR-Cas9 on embryos or germline cells can alter genes permanently and potentially in all body cells. The change will also be passed on to future generations. So far, however, such germline interventions have only been carried out in animal experiments and – abroad – also in experiments with human embryos.

According to his statement made to the Associated Press news agency, Jiankui He from the Southern University of Science and Technology in Shenzhen (China) has now applied the technique to embryos that subsequently developed until birth. The intervention was aimed at modifying a gene for an immune receptor that can provide protection against infection by HIV.

Until now, a clinical application of genome editing of human embryos had been unanimously rejected on an international level for safety reasons alone, as the technology is not yet advanced enough to ensure sufficiently safe and efficacious genome modification in all targeted cells of the developing organism.

In addition, there is a considerable need for ethical and societal clarification as to whether and under what circumstances interventions in the human germline can be justified at all. In September 2017, the German Ethics Council had called for a global political debate and international regulation on this topic in an Ad Hoc Recommendation. Currently, the Council is preparing a detailed Opinion on this subject.

“The application of genome editing on human embryos cannot be justified in any way at the present time and with the current state of the technology, especially not without an urgent medical reason,” said Peter Dabrock, Chair of the German Ethics Council. “The embryos allegedly treated here could have developed into healthy individuals even without such an intervention. Humankind must have a say in this. After all, this is an intervention in the biological basis of man. It affects not only one individual, but potentially all future progeny. In short, the experiments in question here are irresponsible experiments on human beings. Politics must finally address the issue on a global level.”

Medical ethicist Alena Buyx, Chair of the working group of the German Ethics Council dealing with germline interventions, also

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criticises the procedure: “Such a hasty application contradicts all established standards of research ethics. The health risks for the girls treated in this way could not be adequately weighed. In addition, it seems unclear whether the parents were truthfully informed about which study they would agree to.”

The alleged research results have not yet been published in a scientific journal. The German Ethics Council expects to publish its Opinion on germline interventions in the first half of 2019. It will include ethical analyses of possible application scenarios.