

Medicine can cure without using human embryos

On 10 April 2014, the European Parliament held a public hearing for “One of Us”, the Second European Citizens Initiative (ECI) thereby completing the legal procedure. This historic ECI was the second to reach the required 1 million signatures, but is the first in terms of signatures gathered (2 millions) and the first in terms of participating countries (20 out of 28 EU Member States).

The Citizen’s Initiative seeks to stop EU funds from being dedicated to research projects that involve, or presuppose the destruction of human embryos and reallocate these money to ethical research projects respectful of human dignity.

As researchers working with stem cells, we want to give our support to this petition addressed to the European Commission because we deem it scientifically grounded and necessary from an ethical standpoint.

1. Research on Human embryos: Twenty years of research with no results

Nowadays scientist can use human embryos on research in three different ways. The first is the pure or basic research on embryo development. Practically all research conducted on this field use animal models as the fly, the monkey or the mouse.

Human embryos are also wanted for pathology modelling and molecular screening; which are fundamental steps in drug discovery. It’s accepted in the scientific community, even by scientists working with embryos, that iPS cells (Induced pluripotent stem cells, discovered by Shinya Yamanaka who has been awarded the Nobel Prize in Physiology or Medicine in 2012) have the same properties as human embryonic stem cells as far as it concerns pathology modelling and molecular screening. The only advantage that could exist to use embryonic stem cells instead of iPS or animal models is the fact that it could be less expensive, which is important for the pharmaceutical industry.

The third field where embryonic stem cells can be used is the regenerative medicine with cellular therapies using stem cells grafts. In this area, embryonic stem cells are often shown as the only possibility to heal some diseases, which is not true. Adult stem cells, umbilical cord blood stem cells and iPS cells are realistic alternatives on regenerative medicine; in fact the two first cure already some pathologies. Besides that the iPS cells, which proceed from the patient himself, open the doors to personalized medicine because they offer the possibility to make them in a patient-matched manner to analyze and treat his particular disease. This is impossible with embryonic stem cells which, by definition, do not come from the patient.

It’s interesting to know that after twenty years of research with human embryonic stem cells there is not a single example of success therapy. Only three clinical trials have been initiated, and the first of them conducted in the United States by the company Geron has been

stopped because the trial has not produced convincing results. On the other side, even though the technique is new, one clinical trial with iPS cells is already ongoing in Japan. It concerns skin cells reprogrammed to regenerate retinal pigment epithelial cells to treat patients suffering from wet age-related macular degeneration (ARMD).

2. The respect of human dignity: fundamental ethical standard for research

The destruction of human embryos should never become normal (neither should it become an industrialized procedure. The European Union's financial investment in research projects with the minimum ethical standards increases the risk to create a race for profits at the expense of ethical values, such as the respect for human life or environmental concerns, which should guide any scientific research.

Nowadays, the trend in the European Union is to promote high ethical standards in research, to reduce risk for patients but also to treat ethically animals used for clinical trials. In this context it's strange that the European Union agrees to fund types of research that necessarily implies the systematic destruction of human embryos that are "One of Us".

We are living a paradox in research policies at European level where human embryos are less protected than animal embryos. The European Union Directive on the protection of animals used for scientific purposes (2010/63/EU) fix the objective to reduce and replace the use of animals in scientific or educational purposes including "embryonic and foetal forms" by others methods among which we can find human embryos.

That's is why, as scientists, we give our support to the European Citizens Initiative ONE OF US asking for research with high ethical standard.

Signatories

- Prof. Alain Privat, neurobiologist and member of the Académie nationale de Médecine (France)
- Dr. Justo Aznar, Director Life Sciences Institute, Catholic University of Valencia (Spain)
- Dr. Nicolas Jouve de la Barreda , Professor of Genetics, Dept. Cell Biology and Genetics, Fac. Biology, University of Alcala de Henares (Spain)
- Prof. Elena Postigo Solana, Bioethics, Universidad CEU San Pablo (Spain)
- Prof. Mónica López Barahona - Academic Head of the Center for Biosanitary Studies and Bioethicist (Spain)
- Professor Salvino Leone, Obstetricics and gynecology, LUMSA University (Italy)
- Dr. Miguel Blanquer Blanquer, Hematologist Cell Therapy Unit, Hospital Virgen de la Arrixaca (Spain)
- Prof. Blanca Lopez-Ibor Aliño, Oncologist pediatrician (Spain)

- Prof. Bogdan Chazan, Committee of Demographic Sciences (Polish Academy of Sciences), Government Population Council and / or the Scientific Council of the Faculty of Health Sciences Jan Kochanowski University in Kielce (POLAND)
- Prof. dr. ir. H Jochemsen, Holder of special chair of Christian Philosophy at Wageningen University, Wageningen, (Netherlands)
- dr. R. Seldenrijk, CEO(retired) Nederlandse Patiënten Vereniging, Veenendaal, the (Netherlands)