



*Presidenza del Consiglio dei Ministri*

**NATIONAL BIOETHICS COMMITTEE**

**CHIMERAS AND HYBRIDS,  
WITH SPECIFIC ATTENTION TO CYTOPLASMIC HYBRIDS**

(26<sup>th</sup> June 2009)

*abstract*

The NBC's opinion accurately reflects in depth the Committee members' opinions with regard to the bioethical issues raised by the production of hybrids and chimeras, but above all by the production of cytoplasmic hybrids (cybrids), obtained through the technique of transferring the nucleus of a somatic human cell in an enucleated animal egg cell, which still contains animal mitochondria. This technology has been subjected to widespread debate in Great Britain following the authorisation given to carry out this experiment by the Human Fertilisation and Embryology Authority (HFEA). Therefore, it is a topical issue which the NBC has deemed important to be discussed even despite the prohibiting of such practices as established by Law 40/2004 (Regulations on medically assisted procreation).

There are several events of great ethical importance involved as a result of these new methods of intervention: some concern the evaluation of scientific research and the reasons cited in defence of its practicability; others relate to the question of the identity of man and the human species considering the creation of new entities in the laboratory by mixing human and animal genetic material. This examination has also had to take into account the issue of whether cytoplasmic hybrids are human embryos or whether the presence of mitochondrial DNA of animal origin makes them non-human, this issue has not yet elicited a shared response by the scientific world.

A variety of fully argued opinions have emerged within the Committee, some contrary to this research, and others in favour albeit with an attitude of prudence.

Some Committee members have raised bioethical problems with regard to the moment in which the created organisms are of uncertain identity, as they lead to the overcoming of the barriers between the human and animal species. Therefore for these members, a scientific experiment which alters the identity of the human being and the human species, even if this research is carried out in the name of possibly furthering knowledge, is not ethically acceptable. The same members hope for the interruption of the creation of human-animal hybrids and, only if adequately justified, the use of alternative research techniques, for example, hybridization between different animal species, which also requires careful and appropriate bioethical evaluation.

Other members of the NBC, considering the insufficient justification for the experiments on the basis of scientific evidence, make no implication of immorality and do not adhere to the thesis of absolute protection of the embryo in its very first stages of development (it must be emphasised that the cybrids are not destined to develop) and they have not condemned their being created. There is, on the one hand, the empirical observation that the cybrids are not destined to develop and, on the other, the hope for a transparent and rigorous control of these types of experiments, which induce these members to consider this type of research from the most shareable bioethical point of view rather than their pronouncing condemnation a priori based on an excessively limited application of the principle of precaution.

The opinion is accompanied by an appendix and two personal remarks.