

research

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Cloning in Biology

Abstract

Cloning in biology is the process where an identical copy of DNA fragments is made through biotechnology processes. In most cases, organisms produce clones when they are sexually reproductive. Cloning comprises several natural and laboratory processes. After animal cloning in 1996, the sheep Dolly, reproductive cloning has been practiced ever since. Cloning can be defined as a process of creating a cell or an organism using a single cell. The properties of the cloned organism will be identical to the original single cell or a tissue line. The Dolly cloning process has been repeated several to perfect the process. Today, cloning technologies have been developed which increases the efficiency of the cloning process. Since strategies in the cloning process are changing, future therapeutic cloning will include possibilities of transplantation of organs and healing of tissues and nerve cells among other healthcare benefits. The first mammalian cloning an embryo was created using a body and egg cell; thereafter all processes of cloning are based on the first experiment. Although the genetic cloning of human beings is not permitted, it is possible through both natural and laboratory processes using the cloning technologies developed.

Thesis Statement

The ethical problem that is associated with cloning in biology especially human beings occurs in cloned human rights and having confusion about the identity of the original organism. This thesis statement is true since everybody is protected by human rights which avoid legal and ethical issues with the government and another surrounding. The person being cloned will have difficulty in being protected by the human rights act because they have no original identity. For the organism whose DNA fragments and tissue lines that were cloned lose their identity because they have the same genetic identity as another organism (Brown 56). Lose of identity also occurs in human beings whose DNA was cloned and those who have been clones.

Background and Foundation

In the early 1900s Hans Spemann, a German embryologist developed embryo splitting on a salamander. His research became popular that he was awarded a noble price for psychology and medicine in 1935. Embryo splitting was developed to a procedure when cloning known as nuclear transfer. The developed cloning procedure was performed on frogs which produced tadpoles that were cloned. The experiment was performed by Robert Biggs and Thomas King. From these experiments, the cloning of mammals started on different continents. In 1996, Ian Wilmut cloned a sheep and it was later named Dolly (Pence 76). The process by which the sheep was cloned was through nuclear transfer where enucleated embryo and cell nucleus were used in the process. Nucleus transfer was later changed to somatic cell nuclear transfer because science was used in creating an identical clone. In the cloning process, the body cells could be reverted to an embryonic stage, therefore, experiencing pluripotency. Pluripotency is the process where the embryo cell grows into one type o body cell of many types, making a whole organism of the

same body cells as the original. The somatic cell nuclear transfer has undergone changes that will prevent egg damages during the extraction of nuclear and insertion of somatic cell nuclear (Wilmut 585). Therapeutic cloning in humans has a discussion that has been on the table for a long time because research has been slow. The research is slow because there are some technical and ethical challenges and controversies from procuring human eggs.

Cloning experiments

Human cloning has been suggested to be warranted in the industry such as sports, music, politics, arts, and science. In this field of study, human cloning will be used to improve the genes of human kinds. Animals such as frogs, sheep and salamanders and Pando trees are some of the real examples of cloning that took place in ancient times. Every experiment gave fantastic results because of the biological cloning processes and procedures. A cat named Copy Cat was born in 2001 as the first cloned cat through a surrogate mother, Allie. The latest experiments including a dog Snuppy which was cloned in 2005, shows the changes in the controversies of cloning (Brown 92). Erythrocyte nuclei were injected in metaphase I oocyte. After one day the oocyte had matured into metaphase II which was referred to as conventional host. This experiment is based on the hypothesis that molecular components found in the oocyte cytoplasm are similar to the original genetic fragments and tissue lines of the erythrocytes.

Conclusion

Although cloning has variable terms, it generally involves creating copies for biological identity purposes. Cloning is also used in developing and enhancing research in psychology and medicine. Through the animal cloning process researcher and scientists have proof that even human cloning is possible. Human cloning needs a multicellular organism which may be the

reason why it is not warranted. The genes of human beings known as the genome can be cloned but an individual is strictly impossible. The closes that biology has come to individual cloning is in cases of identical twins which comes naturally. They are referred to as identical twins since they have identical genes through which they are two different people.

Works cited

Brown, Terence A. *Gene cloning and DNA analysis: an introduction*. John Wiley & Sons, 2016.

Pence, Gregory E. *Cloning after Dolly: who's still afraid?*. Rowman & Littlefield, 2004.

Wilmut, Ian, et al. "Somatic cell nuclear transfer." *Nature* 419.6907 (2002): 583-587.

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