

Cloning

In 1997, at the Roslin Institute of Midlothian, Scotland, eminent researchers produced Dolly the Sheep, a replica of a sheep with identical genes.

Her adult cell was replicated and this was the first proof that cloning is possible.

New technological discoveries and successful experiments like this one have brought cloning to attention.

Cloning doesn't only refer to scientific cloning, but any process of creating an identical copy of something. This is why cloning has existed naturally on Earth for thousands of years.

Single celled organisms such as bacteria, shrimp, and yeast, produce genetically identical offspring through asexual reproduction.

Starfish and plants have used cloning for thousands of centuries by re-growing their limbs with the same genes.

For example, if a starfish has a limb cut off, it will produce a new limb with the exact same genetic material.

Humans have taken advantage of this natural occurrence and they have been planting the limbs of good plants to have good stock.

Without this efficient technique, many civilizations would have certainly died due to starvation.

Many people are ignorant of the fact that humans have been creating clones for thousands of years. These clones even live among us, and they are commonly referred to as identical twins.

Identical twins have the same genetic material as each other, therefore qualifying in the definition of a clone. For identical twins, their cloning occurs in the womb, where the egg is split in half and two separate embryos develop.

This brings us to the procedure of how to make clones. The first type of cloning is artificial embryo twinning. Artificial embryo cloning mimics the process in which natural twins are created.

The embryo is manually removed and separated into many cells, and then each cell develops on its own in a surrogate mother. Therefore, you obtain several embryos with the same genetic material.

The second type of cloning is called "somatic cell nuclear transfer". It is more complicated and reproduces only one clone at a time.

In somatic cell nuclear transfer, a somatic cell, any type of cell in the body except the reproductive cells, is isolated. This cell is taken from the animal which is desired to be reproduced.

Donor cells are placed into a liquid culture, which stops the cells from dividing.

Afterwards, a fertilized egg is taken and its nucleus containing the DNA is removed. The empty fertilized egg and somatic cell are fused by an electrical impulse.

Therefore, the fertilized egg contains the same DNA as the desired animal and the egg is placed in a surrogate mother for it to develop.

The egg develops normally and creates an exact clone when it is born. Both cloning techniques use different procedures but provide the same result, clones.

The possibilities of cloning are endless because it can have countless benefits, even some of which we aren't conscious of yet.

Through vegetation propagation, plants with advantageous characteristics could be recreated in mass production.

This would allow foods that are more nutritious, disease free, and plentiful to be created.

A new practice is cloning certain organs of the body to replace old ones, in order to expand lifetime.

This means that people could recreate their old organs and replace them with new one so that they always remain young.

Cloning could also potentially help reproduce endangered or extinct species. The cells of endangered or extinct species could be taken and cloned so that it can be studied or be more abundant.

Another benefit of cloning is that it can help scientists study diseases, such as cancer, by multiplying its cells.

Cloning has its benefits but it also has a negative side. Although vegetation propagation can help get better quality plants, it also makes it more susceptible to diseases.

Reproducing vital organs to replace old ones raises many ethical issues. Many religious and ethical groups find all kinds of cloning wrong, especially cloning a body to use a spare organ.

No matter its issues, we must still continue researching and making new discoveries on cloning so that we can learn more about it and make the most of it in the future.