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Gene Mutation

Gene mutation can be defined as the permanent change made to the genome (genetic material) of the cell of any living being (Ma, 2017). This change is transferred to the descendants of the cell which has undergone the change. The gene mutation that occurs in the DNA of the cell of a multicellular organism can be transferred to the descendant cells through DNA replication(Ma, 2017) . As a result, a patch of cells functioning abnormally is created. Any gene mutation that occurs in the sperm cells can result in producing offspring having that mutation. This mutation is often called a germinal mutation and poses a serious threat. For instance, cystic fibrosis is a disease that occurs due to germinal mutation to the cell. Gene mutation can occur from accidents while normal chemical processes of DNA are taking place during replication. Moreover, the gene mutation can occur due to exposure to electromagnetic radiation of higher frequencies. For instance, exposure to ultraviolet or X-rays can cause gene mutation. Additionally, gene mutation can also occur due to exposure of particle radiations and highly reactive substances present in the environment of individuals. As most of the changes made to the genes are random, they often result in rendering some of the most deleterious effects. However, sometimes gene mutation can be termed to as a blessing in disguise as it can prove to be beneficial in certain conditions. Mutation is the primary source of genetic changes, which serves as the raw material for the evolution of the cell.

There are two major ways in which gene mutation can occur. The first type of gene mutation is called the germinal mutation. Germinal mutation can be called hereditary mutation. In this kind of mutation, the changes made to the DNA of a parent are transferred down to the descendants of the cell (Milholland, 2017). This kind of mutations generally occurs in sperm cells as discussed previously. During the unification of a sperm cell and the egg, the fertilized egg contains DNA from both parents. If the received DNA has any sort of mutation, the child that is born as a result of the fertilized egg will contain a mutation in each cell of the body (Milholland, 2017).

On the other hand, acquired mutations can happen at any instance of time in the life of a person. Acquired mutations are also known as somatic mutations (Mertins, 2016). Contrary to germinal mutations which are found in every cell of the body, somatic mutations can affect only a certain area. Somatic mutations can result due to exposure to ultraviolet radiations or X-rays. It can also occur as a result of an error during DNA replication (Mertins, 2016). Acquired mutations that happen in somatic cells are not transferred to the next generation of the cell.

Sometimes, the genetic changes are called de novo mutations which are either somatic or hereditary. There are times when mutations occur in the sperm cells or eggs of a person but are nowhere to be found in any other cells of the person. Then there are times, the mutation occurs at very instance of unification of the sperm or egg. It is difficult to establish when exactly mutation has occurred. Therefore, when the fertilized egg will divide, each cell of the developing embryo will carry that mutation. De novo mutations can prove helpful in the explanation of a disorder that has afflicted a child that never troubled the parents.

Mutations are the changes made in the genetic sequence. Gene mutations are the primary reason for the diversity among different organisms. Gene mutations occur at different levels and can have differing results.

# Works Cited

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