



## Gene Mutations and their Importance in Biodiversity

John Patrick\*

Department of Genetic Diversity, University of Padua, Padua, Italy

### DESCRIPTION

Mutations are changes in gene sequences and are a major cause of biodiversity. These changes are made at many different levels and can have very different results. In particular, some mutations affect only the individual carrying, while others affect all and additional offspring of the carrier organism. In order for a mutation to affect the offspring of an organism, it must occur in the cells that give birth to the next generation and affect the genetic material. Ultimately, the interaction between inherited mutations and environmental pressures creates interspecies diversity. There are many types of molecular changes, but the term "mutation" usually refers to changes that affect nucleic acids. In cell biology, these nucleic acids are components of DNA, and in viruses, they are components of DNA or RNA. DNA and RNA can be thought of as substances that carry the long-term memory of the information that an organism needs to reproduce.

When mutations occur in non-germ cells, these changes can be classified as somatic mutations. The word somatic cell is derived from the Greek word soma and means "body". Somatic mutations affect only the body of the current organism. From an evolutionary point of view, somatic mutations occur systematically and are of no interest unless they change basic individual characteristics such as viability. For example, cancer is a powerful somatic mutation that affects the survival of a single organism. As another focus, evolution is primarily concerned with DNA changes in cells that give birth to the next generation. Although the genome of an organism is entirely composed of DNA, the genome of a virus is composed of either DNA or

RNA. Somatic cells and DNA mutations (genome mutations) are can be transmitted to progeny cells *via* DNA replication, sectors or patches of cells with abnormal functions occur an example is cancer. Mutations in eggs or sperm cells (reproductive cell mutations) can result in a single progeny in which all cells carry the mutation, as in the case of hereditary human diseases such as cystic fibrosis. And often leads to serious dysfunction.

Mutations are accidents during the normal chemical trade of DNA, often during replication, or exposure to high-energy electromagnetic radiation (such as UV or X-ray) or particle radiation or highly reactive chemicals in the environment. Most of them are expected to be harmful because mutations are random changes, but they can also be beneficial in certain circumstances. In general, mutations are the leading cause of genetic variation and the source of evolution by natural selection.

The genome is composed of one or longer DNA molecules and mutations can occur anywhere in these molecules at any time. The serious changes occur in genes, which are the functional units of DNA. Mutant forms of genes are called mutated alleles. Genes are usually composed of regulatory regions that turn on or off transcription of the gene at appropriate times during development, and coding regions that carry the genetic code of functional molecules, generally the structure of proteins. Proteins are primarily chains of hundreds of amino acids. Cells make 20 common amino acids, which are unique numbers and sequences of these amino acids that give proteins their particular function.

**Correspondence to:** John Patrick, Department of Genetic Diversity, University of Padua, Padua, Italy, E-mail: patrick@gmail.com

**Received:** 01-Apr-2022, Manuscript No. RDT-22-16675; **Editor assigned:** 04-Apr-2022, Pre QC No. RDT-22-16675 (PQ); **Reviewed:** 18-Apr-2022, QC No. RDT-22-16675; **Revised:** 25-Apr-2022, Manuscript No. RDT-22-16675 (R); **Published:** 02-May-2022, DOI: 10.35248/2329-6682.22.11.188

**Citation:** Patrick J (2022) Gene Mutations and their Importance in Biodiversity. Gene Technol. 11:188.

**Copyright:** © 2022 Patrick J. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.