

Genetics & Immune System

Evaluation: Theory of Evaluation.

The immune network theory is a theory of how the adaptive immune system works.

That has been developed since 1974 by Jerne and Geoffrey.

The theory states that immune system is an interacting network of lymphocytes and molecules that have variable receptors.

Mendel's Cell division - mitosis & meiosis

The Chromosomal Theory of Inheritance supports Mendel's laws.

During the process of cell division meiosis, the pairs of homologous chromosomes move as discrete structures, which are independent of other pairs of chromosomes.

Three law of mendel

- (1) Law of Dominance & Uniformity
- (2) Law of Segregation
- (3) Law of Independent Assortment

Mitosis :

It is a process of nuclear division in eukaryotic cells that occurs when a parent cell divides to produce two identical daughter cells.

During cell division, mitosis refers specifically to the separation of the duplicated genetic material carried in the nucleus.

Meiosis

Meiosis :-

- It is a type of cell division
- It reduce the number of chromosomes in a parent cell by half and produces four gamete cells.
- This process require to produce egg

Evidence of Elaws of inheritance:

Mendel's law of inheritance are follows
segregation during gamete formation, the alleles for each gene segregate from each other so that each gamete carries only one allele for each gene.

law of Independent assortment: Genes for different traits can segregate independently during the formation of gametes.

Variation & Specification nucleic acids as a genetic materials.

- Nucleic acids deoxyribonucleic acid & ribonucleic acid carry genetic information which is read in cells to make the RNA & proteins by which living things function.
- The well known structure of DNA double helix allow this information to be copied and passed on to the next.

Generation.

Central dogma of Immunology:

The central dogma states that the pattern of information that occurs most frequently in our cells is

From existing DNA to make new DNA
(DNA replication) From DNA to make new
RNA (transcription) From RNA to
make new proteins (translation).

Antibody immune responses:-

Antibodies are produced primarily to mediate the immune response towards foreign pathogens, as part of the adaptive immune response.

Pathogen recognition by B cells in secondary lymphoid organs allows differentiation into memory B cells and plasma cells.