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Positive Aspects in Viruses

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Since Viruses contain the characteristics of both living and non-living organisms, they're utilized within the field of Biotechnology research. Bacteriophage is often utilized in water preservation because it can destroy the bacteria and keep water fresh. Here are other applications of Viruses.

Applied in the fields of Molecular Biology, Cellular Biology, genetics, like DNA replication, transcription, RNA processing, translation, protein transport, and immunology.

Reverse Transcriptase (RT) enzyme is an enzyme that catalyzes the transcription of RNA into DNA; and this enzyme is applied in recombinant deoxyribonucleic acid technology or biology for the molecular manipulation of microorganisms. RT which may even be called RNA-dependent DNA polymerase is especially produced by viruses within the Retroviridae family (e.g. retroviruses).

Virotherapy uses viruses as vectors to treat various diseases, as they will specifically target cells and DNA. It shows promising use within the treatment of cancer and in gene therapy.

The viruses represent largest reservoirs of unexplored genetic diversity on Earth. they will be used as alternative to the antibiotics due to the high level of antibiotic resistance now found in some pathogenic bacteria.

Viruses contain protein and these properties are often utilized in production of varied proteins like vaccine antigens and antibodies.

In nanotechnology, viruses are often considered organic nanoparticles. Due to their size, shape, and well-defined chemical structures, viruses are used as templates for organizing materials on the nanoscale.

It's relatively easy to synthesize a replacement Virus. First synthetic virus was created in 2002, which is really a DNA genome (in case of a DNA virus), or a cDNA copy of its genome (in case of RNA viruses). Ability to synthesize viruses has far-reaching consequences, since viruses cannot be considered extinct; as long because the information of their genome sequence is understood and permissive cells are available. Currently, the full-length genome sequences of 2408 different viruses (including smallpox) are publicly available at a web database.

Some viruses are employed as anti-cancer agents for the treatment of cancer and other molecular diseases.

Viruses can cause devastating epidemics in human societies. They will be weaponised for Bioweapon.

The study of viruses especially at the molecular level using cell/tissue culture techniques and microscopy has acquainted biologists with knowledge that led to the event of other fields like cell and biology. Such studies also led to the invention of important cellular and metabolic components of cells that allowed scientists to know truth nature of some molecular and infectious diseases of man.

Virus and aquatic ecosystem

A teaspoon of seawater contains about a million of Viruses, making them the foremost abundant biological entity in aquatic environments. they're useful within the regulation of saltwater and freshwater ecosystems. The Bacteriophage, which is harmless to plants and animals, play the foremost important role here. They infect and destroy the bacteria in aquatic microbial communities, comprising the foremost important mechanism of recycling carbon within the marine environment. However, the organic molecules released from the bacterial cells by the viruses stimulate fresh bacterial and algal growth. Viruses are useful for the rapid destruction of harmful algal blooms that arises generally from the Blue chlorophyte and sometimes kills other marine life. Viruses INCREASE the quantity of Photosynthesis in Oceans and are liable for reducing the quantity of CO_2 within the atmosphere by approximately 3 gigatonnes of carbon per annum.