

# Existence of Viruses



**Augustine Ehireme Okonofua\***

*Department of Fisheries, Federal College of Fisheries and Marine Technology, Nigeria*

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**Corresponding author:** Augustine Ehireme Okonofua, Department of Fisheries, Federal College of Fisheries and Marine Technology, Victoria Island, Lagos, Nigeria

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## Opinion

A unique characteristic of viruses is that they are always associated with living things (cells). This is because they are totally dependent upon their hosts existence. This total host dependency makes the study of viruses extremely difficult since the internal characteristics of the host's cell interferes with observations made.

Unlike other micro-organisms like bacteria, viruses cannot be cultivated on a laboratory media because of their host's dependency. They therefore cannot be cultivated solely in the presence of organic or inorganic nutrient medium. They can only be grown by the use of living cells and tissues. In laboratory conditions this living cells and tissues act as viral culture medium. For the purpose of viral cultivation, the relevant cells or tissue have to be cultivated under laboratory conditions. Therefore, for the growth of bacteriophages the relevant bacteria will have to be cultivated first. Similarly, cultures of tissues and cells of higher

plants and animals will have to be prepared before attempting the cultivation of plant and animal viruses respectively. It must be noted that in this cultivation of viruses, specific host cells must be cultivated for specific viruses.

Cultivation of bacteria of the desired type is relatively easy as standard procedure and culture media are easily available. The cultivation of tissues or cells of plants and animals is more complicated on the entire process involving such cultivation is commonly referred to as tissue or cell culture. In tissue culture, process of tissue are used while in cell culture dispersed cells of the tissues or loss cells are used. This whole procedure of tissue / cell cultivation must be carried out in aseptic (germ-free) condition and care must be taken to prevent infiltration and growth of unwanted organs like bacteria and fungi. To prevent the development of contaminating micro-organisms, anti-biotic such as penicillin and streptomycin (pen-strep) are normally added.



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