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Short Communication

Brief Note on Classification of Bacteria in Microbial Forms

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DESCRIPTION

Most bacteria (singular, bacterium) are very small, at the order of some micrometers µm (10-6 meters) in length. It would take approximately 1,000 bacteria, one µm in length, placed end-to-end to equal one millimeter, which is about the width of a pencil line. In fact, however, bacteria come in a wide type of shapes and sizes, known as the morphology of the organism. The most common shapes are rod-like, called the bacillus (plural, bacilli) form or spherical, known as the coccus (plural, cocci) form. The rod form vary considerable from very short rods that almost seem like cocci, to very long filaments thousands of microns in length. Bacteria also form spirals and corkscrews, ovals (coccoid), commas and elaborately branched structures. The cocci regularly tackle multi-cell forms as cocci joined together (diplococci), as chains of cocci (streptococci) or as tetrads (four cells in a cube) [1,2].

Bacteria is based on the cell wall structure. There are various types of cells wall that provide different staining characteristics with a series of stains and reagents called the gram stain. Bacteria with a thin wall layer and an outer membrane stain red with this protocol and are called gram negative. Bacteria with a thicker wall layer, lacking the outer membrane, stain violet and are known as gram positive. There is a major division of the bacteria which are now categorized as a separate kingdom, known as the Archae. These bacteria specific in many essential methods from the bacteria that are now known as the Eubacteria. The Archae include many interesting bacteria with unusual metabolic abilities such as those that produce ethane. Bacteria is usually a part of members of the Eubacteria [3].

Although widely varying in morphology, bacteria share one primary feature that they divide through simple binary fission. This means that one cell grows to about double its original size and then splits into genetically identical cells. Since DNA replication occurs before the cells divide, each new cell, called a daughter cell, receives a whole genome (a full set of genes) [4]. The genetically identical daughter cells are called clones. All the progeny of a single original cell form a mass of cells on a solid surface which include agar that is known as a colony [5].

Exponential increase leads to rapidly increasing populations. For example, a bacterium that divides every 30 min has a generation time of 30 min. Every 30 minutes the population doubles. In 30 min the population increases fold, in one hour, 4- fold; in hours, 16-fold; in 24 hours it would theoretically grow over a hundred trillion-fold. In reality microorganism do not grow to such a high population density because their growth turns into constrained because the population density will increase.

CONCLUSION

Bacterial increase over time may be graphed as cell number versus time. This is known as a growth curve. The cell number is plotted as the log of the cell range, because it is an exponential function. Regardless of the generation time, in a growing culture the plot of the log of cell number versus time offers a function curve. In cells which have been freshly inoculated into a new growth medium, the lag phase is the first phase observed. It is characterized through no increase in cell number however, the cells are actively metabolizing, in preparation for cell division. Depending on the growth medium, the lag phase may be short or very lengthy.

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