

Multidisciplinary Aspect of Microbiology

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Microorganisms are found in almost every habitat present in nature. These are single celled microscopic organisms which are very diverse includes bacteria, fungi, archaea, green algae and animals also such as plankton and planarian. Microbiology essentially and predominantly deals with the different species of these organisms. Microbiology has been a science that has fascinated scientists for centuries. The original interest in microorganisms was associated to pathogenesis but it is now clear that it implies something much more important than the study the morphology of microorganisms. Microbiology is extremely multidisciplinary and domain prominently spread in a wide spectrum of fields, such as: medical science, pharmaceutical sciences, biology, biochemistry, molecular biology, genetics, genomics, genetic engineering, chemistry, and many other areas related to the processes taking place on the planet Earth.

The areas of interdependence of the microbiology are huge such as in generating bioproducts, bioenergy, bioremediation, biosensors, health and agricultural activities. It is becoming an integral part of synthetic biology for genetic circuits for producing: (i) novel products, (ii) biosensors, (iii) bioactive molecules, etc.

In addition to the fact that microbiology deals with the study of various microorganisms, its focus is also on their products, a chemical substance produced by a microorganisms, that has the capacity, in low concentration, to inhibit or kill, selectively, other microorganisms; different types of antibiotics, antimycotics, antiviral and antiprotozoal substances and components.

Today has brought with it the consequence of the evolution of microorganisms that have always been posed a threat to multicellular highly organized systems, whose specific immune response shaped as an adaptation to their presence. Now, when their diversity and speciation reach their peak, the effectiveness of many antimicrobial agents to date is questionable, as stated at the beginning of the introductory part. How bacteria have developed to some degree antibiotic resistance has been intensively studied since the 1970s products of natural origin that would represent future antibacterial agents It is interesting that the paradigm lies in the belief that one type of bacteria causes a specific infection, however, today they are increasingly the focus of polymicrobial infections, the monitoring of which is enabled by the sequencing of metagenomas and metatranscripts microbiological communities associated with a given disease.

From the above, we can assume that the future brings us new ventures and new ones ideas that will put man as such in the background, when he himself will return to the microbiological postulates. This opens the door to new research in the field of therapy in the distant future. Modern scientific studies on potential therapeutic functions different microorganisms suggest that organisms may become an important resource for detection new drugs in the near future. Definitely, today we cannot draw conclusions a priori on the basis of individual points of view, and in recent times with the rapid development of technology and various methods, it is increasingly applying an integrative approach that implies different branches of science. These insights not only provide certain benefits directly to humanity, but also enable the finding of solutions in the preservation of nature.

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