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Evolution of Antibiotics Future of Biotechnology in Healthcare

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A Finding shows that from the beginning in the 1940s, mass production of antibiotics involved the industrial scale growth of microorganisms to harvest their metabolic products. A huge environmental antibiotic pressure, resulting from industrial production and marketing of these drugs, has simultaneously contributed to the increase in the diversity of resistant phenotypes, to the selection of the fittest among them, and to the dispersal of resistance genes, which is expected to result in a significant acceleration of the rate of microbial evolution. New agents displaying innovative chemistry and modes of action are desperately needed worldwide to tackle the public health menace posed by antimicrobial resistance. The turn in cause to move circular direction to the study of antibiotic resistance in microbiology and medicine is examined, focusing on the realization that individual therapies targeted at single pathogens in individual bodies are environmental events affecting bacterial evolution. In the chemistry of antibiotics natural products is shaped by the unique evolution and ecology of their producing organisms, yet these influences remain largely unknown. The review the evolutionary process is underlying the chemical diversity and activity of microbe derived antibiotics including the dynamics of vertical and lateral transmissions of biosynthetic path ways and the evolution of efficacy, targeting specificity and toxicity. More action is needed to address antibiotic resistance, while the development of new treatments is one of these key actions, such investments must be coupled with dedicated efforts toward preventing infections in the first place, slowing the development of resistance through better antibiotic use. The number of drugs of biotechnological origin available for many different diseases has increased exponentially, including different types of cancer, diabetes mellitus, infectious diseases and etc. The pharmaceutical industry has used different technologies to obtain new and promising active ingredients, as exemplified by the fermentation technique, recombinant DNA technique.

Biography

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