OPEN ACCESS Freely available online

ISSN: 2327-5073
Clinical Microbiology: Open Access

Opinion Article

Brief Note on Natural and Synthetic Microbial Medicine

Sandra Andersen*

Department of Bioengineering and Therapeutic Sciences, University of California, California, United States

DESCRIPTION

Microbes have had a remarkable impact on human health and wellbeing all over the world. They are able to produce secondary metabolites, which make up half of the medications on the market today and supply agriculture with many vital goods, in addition to many primary metabolites, including as amino acids, vitamins, and nucleotides. This article focuses on these advantageous secondary metabolites, whose identification predates the discovery of penicillin by Alexander Fleming by 80 years.

Due to the enormous chemical diversity present in the millions of species of plants, animals, marine organisms, and microbes, nature offers a promising source of novel treatment candidates. Natural products continue to be a valuable source of novel chemical entities, novel pharmacological leads, and novel pharmaceuticals. Since ancient times, microbes have been used to generate food ingredients. Since many years ago, microorganisms have been used in the large-scale manufacturing of numerous bio-chemicals, ranging from alcohol to antibiotics, as well as in the processing of meals and feeds. For the treatment and prevention of diseases including cancer, anaemia, diarrhoea, obesity, diabetes, atopic dermatitis, Crohn's disease, etc., microorganisms hold enormous promise as natural sources of pharmaceuticals. In addition, they may contain natural antibiotics, anti-inflammatory drugs, immune suppressants, enzyme inhibitors, hypocholesterolemic agents, vitamins, and antioxidants.

Furthermore, it is common knowledge that about 70% of the earth's surface is covered by oceans, underscoring the significance of marine sources in the biodiscovery of medicines. The maritime environment is home to a vast array of ecosystems that are adapted to a wide range of environmental factors, including temperature, nutrient availability, and lit/unlit areas. This variety provides favorable conditions for the growth of a wide variety of organisms, including invertebrates like sponges, coelenterates (sea whips, sea fans, and soft corals), ascidians (also known as tunicates), opisthobranches mollusks (nudibranchs, sea hares, etc.), echinoderms (starfish, sea cucumbers, etc.), and bryozoans (marine algae including (bacteria and fungi). Marine species, particularly invertebrates, are a significant source of new structural classes of secondary metabolites, as evidenced by the isolation of thousands of novel secondary metabolites with a wide variety of intricately complex chemical entities. Invertebrates and microbes from the ocean are anticipated to be among the most promising creatures for the discovery of novel medications. Many marine animals have been studied, including sponges, soft corals, algae, ascidians, bryozoans, and mollusks. These studies have led to the discovery of novel secondary metabolites, which display structural and chemical characteristics not present in terrestrial natural products.

Chemical molecules created in a lab are synthetic medications. They may be created legally through legitimate channels by pharmaceutical companies for legitimate medicinal needs, or they may be produced illegally in covert labs for black markets around the world. Synthetic drugs are created covertly with the intention of imitating or even enhancing the effects of natural illegal substances like marijuana.

Synthetic medications may be addictive and represent a major risk to the general public's health. However, it is challenging for regulatory bodies to regulate or keep an eye on synthetic medications. Manufacturers frequently make minor modifications to the molecular structures of illegal or controlled substances in order to get around current drug laws. They may also label their products as "not for human consumption" in order to conceal their true intent and get around Food and Drug Administration (FDA) regulatory oversight of the production process.

The abuse of synthetic pharmaceuticals has probably been facilitated by the availability of these medicines, their low cost, and the false belief that they are "natural" and safe. Another contributing issue is the potential for synthetic narcotics to avoid routine drug tests that cannot easily detect many of the molecules in the drug. Synthetic medications fall into two main groups. There are artificial stimulants; such include ecstasy, synthetic opioids, and bath salts. The euphoric properties of THC, the main psychoactive component of marijuana, are mimicked by synthetic cannabinoids.

Correspondence to: Sandra Andersen, Department of Bioengineering and Therapeutic Sciences, University of California, California, United States, E-mail: Sandra@892478.com

Received: 01-Sep-2022, Manuscript No. CMO-22-18277; **Editor assigned:** 06-Sep-2022, Pre QC No. CMO-22-18277(PQ); **Reviewed:** 22-Sep-2022, QC No. CMO-22-18277; Revised: 29-Sep-2022, Manuscript No. CMO-22-18277(R); **Published:** 06-Oct-2022, DOI: 10.35248/2327-5073.22.11.305.

Citation: Andersen S (2022) Brief Note on Natural and Synthetic Microbial Medicine. Clin Microbiol.11:305.