

# Future of Antimicrobials <sup>†</sup>

Jagiassi Sunil Radhakrishin <sup>1,\*</sup>

<sup>1</sup> SevaSadan's R.K. Talreja College, Ulhasnagar, Dist.-Thane (MS), India

\* Correspondence: [sunilrjagiassi@yahoo.com](mailto:sunilrjagiassi@yahoo.com);

<sup>†</sup> Presented at Virtual symposium to observe World Antimicrobial Awareness week "Applications of biotechnology and microbiology with special emphasis on Antimicrobial resistance", 18-24 November 2020, Chennai, India

**Received: 10.11.2020; Revised: 15.11.2020; Accepted: 17.11.2020; Published: 10.01.2021**

**Abstract:** One of the triumphs of modern medicine has been the development of antibiotics and other antimicrobials. But the development of resistance to them by the target microbes is a worldwide public health problem. On first exposure to a new antimicrobial compound, very few persister cells are seen, but because of the rapid reproductive rate of bacteria, very shortly, the entire population becomes resistant to the new antibiotic. As pathogen develops resistance to current antimicrobial agents, the demand for new ones becomes more pressing. However, it is not an easy task. The main reason for encountered antibiotic resistance problem is that the developers relied on a limited range of targets. A new approach to control pathogens controls their virulence factors rather than the organism responsible for its production. Some examples are neutralizing/destroying the toxins produced by organisms, sequestering the iron which is required for microbial proliferation, etc. Also, new exotic ecological niches can be used to be exploring for antimicrobial compounds. Microorganisms are not only the producer of antimicrobial compounds. Many birds, amphibians, and plants often produce antimicrobial peptides. Many of these peptides are also identified for their activities, such as megainins produced by amphibians, squalamine produced by sharks, etc. Many bacteriocins are with broad-spectrum activity with low host toxicity and having different targets for action other than those commonly used by antimicrobial compounds. Bacteriophages isolated from soil can also be tried for the treatment of antibiotic-resistant infections.

**Keywords:** antibiotics; antimicrobial peptides; resistance.

© 2021 by the authors. This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## Funding

This research received no external funding.

## Acknowledgments

This research has no acknowledgment.

## Conflicts of Interest

The authors declare no conflict of interest.