

Sustainable approach of utilizing potential actinobacteria in variety of biotechnological realms

Owing to their importance as a source of bioactive compounds, actinobacteria are among the most studied prokaryotes. On average, Actinobacteria synthesize around 10,000 bioactive metabolites, which is about 45% of all bioactive metabolites made by microbes. These metabolites produced by actinobacteria have been shown to contribute to a wide range of physiological, cellular, and biological functions. The biotechnological applications of actinobacterial metabolites range from the production of enzymes, antibiotics and enzyme inhibitors which are used in cancer and tumour treatments to the breakdown and disintegration of a wide variety of organic compounds (including cellulose, polysaccharides, proteins, lipids and organic acids). Actinobacteria play a significant role in plant biotechnology as well due to the fact that strains that possess antagonistic activity against plant diseases are advantageous for biocontrol and promote plant growth. Individuals of several different Actinobacteria genuses have the ability to act as catalysts in the bioconversion of discarded agricultural and municipal wastes into high-value chemicals. In the food, textile, fermentation, and paper industries, the metabolic features of Actinobacteria open up a wide range of potential industrial and commercial applications.

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Keywords:

Metabolites, Applications, Actinobacteria, Bioactive metabolites, Agricultural.

Biography:

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Received: October 30, 2022; **Accepted:** October 31, 2022; **Published:** November 03, 2022