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Abstract

The Use of Actinomycetes in the Production of Secondary Metabolites, Including Antibiotics, in Dealing with MRSA Strains

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Abstract

Staphylococcus aureus is one of the earliest bacteria detected in infants, children and adults with cystic fibrosis (CF). The rise of methicillin resistant *S. aureus* (MRSA) in the last ten years has caused a lot of attention to this organism. The most important feature of microbial bioactive compounds is that they have specific microbial producers, their diverse bioactivities and their unique chemical structure. This review tries to check anti- methicillin resistant of *S. aureus* activity of actinomycetes isolated from soil and fresh water, because MRSA is a major health concern, as it causes numerous infections in both health care facilities and communities. According to published papers, scientists working on actinomycetes have used a nearly identical method, first collecting samples from different sources, mostly soil, at different depths and distances, and mixing them with different compounds to make Use different jobs. The findings show that most actinomycetes are mesophile with an optimum growth temperature of 30°C. The factors that affect the activity of actinomycetes in the production of secondary metabolites are temperature, pH, concentration of sodium chloride salt (NaCl), carbon source, nitrogen source and the best media for the growth of actinomycetes. In conclusion, actinomycetes found in water and sea have better antimicrobial activity against pathogenic bacteria, including MRSA strains, Also, marine actinomycetes in lower concentrations inhibit the activity and growth of many pathogenic bacteria.

Keywords: *Actinomycetes, Staphylococcus aureus, MRSA, Secondary metabolites*

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