

Antagonistic interactions of sponge-associated actinobacteria against heterotrophic bacteria from sponge and ambient water

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Abstract

In the present study, 11 sponge-associated Actinobacteria showed 316 inhibitory interactions against 75 heterotrophic bacteria as each Actinobacteria inhibited the growth of >1 bacterial isolates from the sponge and ambient water. The antagonistic activity depended on the source of isolation and taxonomic group of heterotrophic bacteria. The order of inhibition of bacteria by Actinobacteria was ambient water > cortex > mesohyl tissues of sponge. The absence of certain genera in sponge might be because of the inhibition by sponge-associated Actinobacteria. Hence, the antagonistic property of Actinobacteria in the sponge may influence selection of resident sponge-associated bacteria.

Key words: Sponge, Actinobacteria, Heterotrophic bacteria, Antagonistic activity