Biological studies on the effect of *Bacillus* peptides on the antimicrobial activity of gramicidin S

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Antibiotic production as defense mechanism is a characteristic of a wide variety of organisms. These defense molecules vary greatly and may take the form of extra-cellular enzymes such as proteases, enzymes and DNA replication inhibitors and antimicrobial peptides. In this study, peptides from two co-habiting bacteria were investigated. The peptides in this study, gramicidin S from *Bacillus brevis* and peptides from *Bacillus subtilis*, have been shown to target both membrane and intercellular components of target organisms. Evidence is presented that another function may exist for *B. subtilis* peptides, that of a shielding molecule or anti-antibiotic. It was found that the peptides tested antagonise the antimicrobial action of gramicidin S in a dose-dependant manner against a variety of target cells. This antagonism is possibly the result of the formation of an inactive complex between the *B. subtilis* peptides and gramicidin S.