

Anti-microbial peptides Vs cancer cells – An academic review

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Abstract

Although there have been a large number of positive developments in the treatment of cancer in recent years, it has been noted that some cancer cells have developed a resistance to drugs. As a result, there is increasing attention being paid to the development of anti-cancer agents with an alternative mode of action. Cationic Anti-Microbial Peptides (AMPs) are harmless to normal mammalian cells but have toxic effects on bacteria, and numerous studies have shown they can also have similar cytotoxic reactions to cancer cells. These studies have led to an increased interest in further understanding the immune system, focusing particularly on the potential for natural and synthetic AMPs to be used as clinical antibiotics. It is believed that AMPs strong binding to, and selective disruption of, cancer and bacterial cells can be partly attributed to the electrostatic attraction between these negatively charged cells and the positively charged AMPs. At the moment, it is not clear why only some host defense peptides have the ability to eliminate cancer cells, nor whether the underlying molecular mechanisms relating to the anti-cancer and anti-bacterial properties of AMPs have any similarities. This article reviews several studies documenting the various AMPs which have demonstrated cytotoxic activity towards cancer cells, as well as discussing whether these AMPs are suitable to be used as cancer therapy.

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Biography:

Saleh Mohammed Alamri completed his master degree of pharmaceutical biotechnology from De Montfort University of UK in 2014. Mr. Alamri is working as a assistant director pharmacy of material management in Prince Sultan Military Medical City, KSA. He presented his work in national and international scientific conferences and meetings.