

عنوان مقاله:

An investigation of some Clostridium genus on cancer therapy

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خلاصه مقاله:

Currently, cancer has one of the highest mortality rates worldwide. Common therapeutic approaches (chemotherapy, radiotherapy and surgery) in cancer therapy are somewhat limited. Bacteria were known as enemies in the past, but at present are known as friends. They have shown great potential for cancer therapy. Bacteria of many species demonstrate the amazing ability to attack and colonize solid tumors. Successful cancer treatment remains a major challenge. As a result, alternative therapies for tumor therapy are being sought. One of these is the use of live species of Clostridium, Clostridia is probably the most widespread of all pathogenic bacteria that produce the highest number of toxins of any type of bacteria. Bacterial-based tumor-targeted therapy is an area of growing interest and holds promise for the treatment of solid tumors. Upon systemic administration, various types of non-pathogenic obligate anaerobes and facultative anaerobes have been shown to infiltrate and selectively replicate within solid tumors. The tumor specificity is based upon the unique physiology of solid tumors, which is often characterized by regions of hypoxia and necrosis. Prokaryotic vectors can be safely administered and their potential to deliver therapeutic proteins has been demonstrated in a variety of preclinical models. There are several issues however that are still unknown and remain major challenges. Although past results have fuelled skepticism about its clinical use, recent promising findings emphasize the potential of Clostridium-directed tumor therapy. In this lecture, using Clostridium as prototypical agents, I will discuss the major advantages, challenges and shortcomings of bacterial systems for tumor-specific therapy.

کلمات کلیدی:

tumor-targeted therapy, non-pathogenic anaerobes, Clostridium

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