

عنوان مقاله:

A study and analysis on the two-way functional effects of Staphylococcus on carcinogenesis

محل انتشار:

هفتمین کنفرانس بین المللی پژوهش های کاربردی در علوم و مهندسی (سال: 1402)

تعداد صفحات اصل مقاله: 30

نویسنده:

Maryam Rasouli - Master of Molecular Genetics, Department of Genetics, Faculty of Advanced Science and Technology, Tehran Medical Science, Islamic Azad University, Tehran, Iran

خلاصه مقاله:

Staphylococcus is a genus of Gram-positive bacteria in the family Staphylococcaceae from the order Bacillales. Under the microscope, they appear spherical (cocci), and form in grape-like clusters. Staphylococcus species are facultative anaerobic organisms (capable of growth both aerobically and anaerobically). The name was coined in ۱۸۸۰ by Scottish surgeon and bacteriologist Alexander Ogston (۱۸۴۴–۱۹۲۹), following the pattern established five years earlier with the naming of Streptococcus. It combines the prefix "staphylo-" (from Ancient Greek: σταφυλή, romanized: staphylē, lit. 'bunch of grapes'), and suffixed by the Modern Latin: coccus, lit. 'spherical bacterium' (from Ancient Greek: κόκκος, romanized: kókkos, lit. 'grain, seed, berry'). Staphylococcus was one of the leading infections in hospitals and many strains of this bacterium have become antibiotic resistant. Despite strong attempts to get rid of them, staph bacteria stay present in hospitals, where they can infect people who are most at risk of infection. Staphylococcus includes at least ۲۳ species. Of these, nine have two subspecies, one has three subspecies, and one has four subspecies. Many species cannot cause disease and reside normally on the skin and mucous membranes of humans and other animals. Staphylococcus species have been found to be nectar-inhabiting microbes. They are also a small component of the soil microbiome. As a Gram-positive cocci existing in nature, Staphylococcus has a variety of species, such as Staphylococcus aureus and Staphylococcus epidermidis, etc. Growing evidence reveals that Staphylococcus is closely related to the occurrence and development of various cancers. On the one hand, cancer patients are more likely to suffer from bacterial infection and antibiotic-resistant strain infection compared to healthy controls. On the other hand, there exists an association between staphylococcal infection and carcinogenesis. Staphylococcus often plays a pathogenic role and evades the host immune system through surface adhesion molecules, α -hemolysin, PVL (Panton-Valentine leukocidin), SEs (staphylococcal enterotoxins), SpA (staphylococcal protein A), TSST-1 (Toxic shock syndrom toxin-1) and other factors. Staphylococcal nucleases (SNases) are extracellular nucleases that serve as genomic markers for Staphylococcus aureus. Interestingly, a human homologue of SNases, SND1 (staphylococcal nuclease and Tudor domain-containing 1), has been recognized as an oncoprotein. This review is the first to ... summarize the reported basic and clinical evidence on staphylococci and neoplasms

کلمات کلیدی:

Bacterial extract, Bacillus atrophaeus, Anticancer effect, Anti-microbial

لینک ثابت مقاله در پایگاه سیویلیکا:

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