Beta glucanas - Efeitos nas metástases do câncer

The effects of β-glucans on cancer metastasis.

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[Au] Autor: Yoon TJ; Koppula S; Lee KH
[Ad] Address: Department of Food and Nutrition, Yuhan College, Bucheon 422-749, Korea.
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[Ab] Abstract: Beta-glucans (β-glucans), naturally occurring polysaccharides, are present as constituents of the cell wall of cereal grains, mushrooms, algae, or microbes including bacteria, fungi, and yeast. Since Pillemor et al. first prepared and investigated zymosan in the 1940s and others followed with the investigation of β-glucans in the 1960s and 1970s, researchers have well established the significant role of β-glucans on the immune system relative to cancer treatment, infection immunity, and restoration of damaged bone marrow. However, information on their biological role in anti-metastatic activity remains limited. As an immunomodulating agent, β-glucan acts through the activation of innate immune cells such as macrophages, dendritic cells, granulocytes, and natural killer cells. This activation triggers the responses of adaptive immune cells such as CD4(+) or CD8(+) T cells and B cells, resulting in the inhibition of tumor growth and metastasis. Reports have shown that β-glucans exert multiple effects on cancer cells and cancer prevention. However, the mechanisms of their actions appear complex due to differences in source, chemical structure, insufficiently defined preparation, and molecular weight, hence the inconsistent and often contradictory results obtained. This review is focused on the potential of β-glucans as anti-metastatic agents and the known mechanisms underlying their biological effects.