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Probiotics and anti-cancer pharmabiotics

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Cancer is ranked as the deadliest disease worldwide after cardiovascular disease. Tens millions cases annually are diagnosed to cancer around the world and among them, colorectal cancer is the third leading cause of cancer mortality. There are several epidemiological evidences supporting a protective role of probiotic bacteria as biotherapeutics against many types of cancer such as breast, liver, pancreatic, lung, prostate and especially colon cancer. Today growing number of probiotic products are avaliable as functional foods, food supplements and drug form supplements as tablets, powders, liquids, gums, shells, beads, and lozenges. *In vivo* and *In vitro* studies demonstrated that cellular probioactive metabolites of probiotics such as enzymes, peptides, organic acids, exopolyschacaride and especially short fatty acids produced through fermentative activities of probiotics in the gut show anti-tumorigenic attributes. Lactic Acid Bacteria (LAB) as the most common types of probiotics are an ecologically divers group of bacteria united by producing lactic acid as fermentation product play a major role in treatment and prevention of a variety of disease like cancer. Their anti-cancer activity is atributed to reduction of DNA damage induced by chemical carcinogens and increase activity of anti-oxidative enzymes that protects cells against carcinogen-induced damage. Further their metabolites, it has also been reported that ingredients of decomposed probiotic dead bodies have preventive and therapeutic impacts on cancer when they die and leave epithelial texture of the host's colon. This paper summarizes the latest identified anti-tumor pharmabiotics from different species of probiotic bacteria with focus on LAB.

Biography

Samira Mokhtari has recently completed her Master's course at the age of 25 in Food Microbiology from Gorgan University. She have worked on probiotic bacteria as her thesis and had 4 under submision papers in this fuild. She was also a co-worker in a PhD thesis under the title of "Molecular identification of lactic acid bacteria isolated from dairy products and study of their anti-cancer properties" under the supervision of Dr. Khomeiri, Associate Professor in University of Gorgan. her papers include:

1. Producing of functional grape juice by probiotic bacteria and evaluate its physicochemical and sensory characteristics and survival of bacteria during the storage (under submission).
2. Evaluation of types of produced non-dairy functional beverages by probiotics. (Published in 1st National Conference on novel Food Sciences, Iran, 2014)

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