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Nutrition and Cancer >

Volume 67, 2015 - Issue 3

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Nutrient and Nonnutrient Components of Legumes, and Its Chemopreventive Activity: A Review

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Pages 401-410 | Received 28 Feb 2014, Accepted 18 Nov 2014, Published online: 24 Feb 2015

 Download citation <https://doi.org/10.1080/01635581.2015.1004729>

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Abstract

Legumes in combination with other products are the staple food for a large part of the world population, especially the low-income fragment, because their seeds provide valuable amounts of carbohydrates, fiber, and proteins, and have an important composition of essential amino acids, the sulphured amino acids being the limiting ones. Furthermore, legumes also have nonnutritional compounds that may decrease the absorption of nutrients or produce toxic effects; however, it has been reported that depending on the dose, these nonnutritional compounds also have different bioactivities as antioxidant, hypolipidemic, hypoglycemic, and anticarcinogenic agents, which have been proven in scientific studies. It has been observed that in countries with a high consumption of legumes, the incidence of colorectal cancer is lower. Some studies have shown that legume seeds are an alternative chemopreventive therapy against various cancers especially colon; this was verified in various animal models of induced by azoxymethane, a colon specific carcinogenic compound, in which a diet was supplemented with different concentrations of beans, lentils, chickpeas, or soybeans, mostly. These studies have proven the anticancer activity of legumes in early stages of carcinogenesis. Therefore, it is important to review the information available to elucidate the chemopreventive mechanisms of action of legume compounds.



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