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Rapid Communication

Using soya bean as an anticancer drug

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Abstract

Soybean (*Glycine max*) is a high-protein, high-vegetable-oil source with a variety of health benefits, including decreased plasma cholesterol and cancer prevention. Cancer accounts for 10% of all fatalities worldwide, prompting the development of more effective treatment alternatives. Isoflavones are a collection of plant-derived compounds that have been proven to have anticarcinogenic, antioxidant, and anti-inflammatory properties. They are predominantly produced by the Fabaceae family.

Keywords: *Glycine max*, Anti-carcinogenic, Isoflavones, Phytoestrogens.

INTRODUCTION

Cancer is a terrible disease that has emerged as one of the world's most important public health issues, mandating a proactive approach to its treatment. The purpose was to employ a computer-assisted virtual screening method to assess the ability of selected isoflavones to bind to potential therapeutic targets in various types of cancer, as well as to learn more about their anti-inflammatory and antioxidant properties. Twenty-two receptors were studied for anticancer purposes, two for anti-inflammatory purposes, and three for antioxidant purposes. Isoflavones (Daidzein, Genistein, and Glycitein) have the ability to bind to DNA (Spagnuolo et al., 2015).

As a result, COX-1 and catalase were developed as effective anti-inflammatory and antioxidant targets, respectively. The current study discovered that isoflavones have better interaction capabilities with certain cancer targets than their natural ligands or known anticancer drugs, as well as a powerful anti-inflammatory and antioxidant approach.

Soybeans are legumes, just like peas, clover, and alfalfa. Soybeans are dicots (plants with two cotyledons), which means they have two cotyledons (Ali and Mann, 2004). Each soybean plant yields 60 to 80 pods, each containing three pea-sized beans. Soybeans are hardy plants that may thrive in a variety of soils and conditions. Soybeans mature in 3 to 5 months and grow more slowly than most garden beans, preferring warmer environments (Phillip et al., 2012).

Soybeans produce a main taproot at first, but many lateral roots branch off shortly after emergence to form a fibrous root system. Within a week of their first appearance, young Root nodules form on the roots of soybeans. (4) Rhizobium,

a nitrogen-fixing bacterium, enters the nodules and, after ten to fourteen days, can supply 80 percent of the plant's nitrogen requirements. Soy includes isoflavones, which are converted to phytoestrogens in the body. The molecular structure of phytoestrogen molecules is similar to that of oestrogen. These phytoestrogens can, in some situations, imitate the actions of oestrogen. In some situations, phytoestrogens can counteract estrogen's effects.

Soy is used to treat excessive cholesterol, high blood pressure, heart disease, diabetes, menopause symptoms, and premenstrual syndrome (PMS). It's also claimed to treat a range of diseases, albeit many of these claims are unsubstantiated by scientific evidence.

Soybean oil is a vegetable oil that is derived from the bean's seed. In India, it is commonly used as cooking oil. The seeds are cracked and heated to 60 to 87 degrees Celsius throughout the manufacturing process.

Soak, grind, and boil soybeans with water to make soyabean milk. It is one of the most nutrient-dense beverages that can help you maintain optimal health.

Roasted soybeans are processed into a powder and used to make soyabean flour. The flour is considered healthy and can be used as a wheat flour substitute (Li et al., 2005).

Others: Foods made from soy beans, such as tofu and soy yoghurt, are high in protein and minerals.

It has a minimal fat content and nearly no cholesterol.

It contains omega – 3 fats which is good for the heart.

Calcium and Vitamin B12 are abundant in this food.

It is a good source of protein containing all amino acids.

It contains essential minerals like selenium, iron, calcium and magnesium.

It helps in reducing disease related to heart, cancers and osteoporosis.

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