

Cancer Treatment and Prevention Support

The American Institute for Cancer Research has their Ten Recommendations for Cancer Prevention, and most of them center on the foods choices we make. Of course, there's the daily exercise routine, and the goal of being as lean as possible without becoming underweight; but most all of the others have to do with what we put in our mouth.

Therapeutic Food Supplements provide intelligent support for cancer prevention.

A Therapeutic Food protocol to support our ability to prevent and aid in treating cancer:

- **Garlic, organic**- 1 to 2 capsules daily (more is okay, but not enough so that your skin has a garlic odor)
- **Cruciferous Sprout Complex** 3-4 capsules daily, preferably on an empty stomach
- **Phyto Power, wild crafted**- 1-2 capsules daily
- **Beta Glucan High Potency Synbiotic**- 2 tablespoons daily

Food Science:

Epidemiological studies have consistently linked abundant consumption of fruits and vegetables to a reduction of the risk of developing several types of cancer. Boivin et al., (2009) evaluated the inhibitory effects of extracts isolated from 34 vegetables on the proliferation of 8 different tumor cell lines: breast cancer, brain tumors, kidney cancer, lung cancer, childhood brain tumors, pancreatic cancer, prostate cancer and stomach cancer.

The best by far were vegetables from the Allium (particularly garlic) and the Cruciferous (particularly broccoli) families—inhibiting these cancers almost 100%. The researchers concluded, "The inclusion of cruciferous and allium vegetables in the diet is essential for effective dietary based chemo-preventative strategies."

Berry fruits have beneficial effects against several types of human cancers; and the evidence is overwhelming. Their anticancer potential benefits are related to their polyphenols (flavonoids, proanthocyanidins, gallotannis, phenolic acids), stilbenoids, lignans and triterpenoids (Seeram NP., 2008).

Their benefits mediated through to:

- Counteract, reduce and repair damage from oxidative stress and inflammation.
- Regulating carcinogen and xenobiotic metabolizing enzymes, transcription and growth factors, inflammatory cytokines, and cellular signaling pathways of cancer cell proliferation, apoptosis and angiogenesis.
- Sensitize tumor cells to chemotherapeutic agents by inhibiting pathways that lead to treatment resistance.
- Provide protection from therapy-associated toxicities.

Garlic, Organic Freeze Dried- each capsule contains 4 to 5 cloves of raw high active's (alliin and alliinase) garlic.

Garlic contains phytoalexins that have been shown to induce apoptosis and target transcription factors, cell cycle checkpoints, and cell invasion. Garlic improves phase 2 detoxification pathways. Garlic contains allyl sulfides compounds that show anti-proliferative effects on tumor cells as well as aiding in detoxification. Garlic also contains natural organosulfur compounds (OSCs) that have been shown to have chemo-preventive effects and to suppress the proliferation of tumor cells in vitro through the induction of apoptosis (Cao et al., 2014; Romagnolo et al., 2012; Nepravishtha et al., 2012; Melino et al., 2011)

Cruciferous Sprout Complex contains broccoli sprouts, daikon radish sprouts, red radish sprouts, watercress sprouts, kale sprouts, mustard sprouts and cabbage sprouts; all together containing high levels of not only glucosinolates, but also high levels of myrosinase (from red radish)—the enzyme necessary for high production of sulforaphanes.

Cruciferous Sprouts are an exceedingly rich source of glucosinolates and isothiocyanates that through their breakdown products induce phase 2 detoxication enzymes, boost antioxidant status, and protect animals against chemically induced cancer formation. They are among the most promising chemopreventive dietary constituents. They appear most closely associated with reduce cancer risk in organ is such as the colorectum, lung, prostate and breast. (Abdull Razis & Noor., 2013; Steinkeller et al., 2001).

Phyto Power- each capsule contains 3 species of Alaskan wildcrafted rosehips (the whole fruit and seeds), four species of wildcrafted blueberry (fruit >95% w/w and leaves and stems <5% w/w), and four species of wildcrafted dandelions (aerial parts 90% w/w, roots 10% w/w and flower).

The environment from which a plant comes has a tremendous effect on its nutrient potency.

When plants are farmed organically their nutrient values tend to be higher, especially when we are considering the micronutrients. They don't have the crutch of relying on an herbicide or pesticide for their protection and they must produce more of their own phyto-chemicals to fend off invaders and survive.

Alaska is a challenging environment. The growing season has intense sun 20 hours a day. Yet, the ground is still partially frozen due to the lattitude. It is a mountainous region of the world where the wild soil is very rich in volcanic ash—resulting in an abundance of minerals and organic nutrients for the plants. Berries tend to be tart and are loaded with phenolic actives—the very phytochemicals that we need for protection from chronic diseases.

Rosehip derives its orange color from its abundance of lycopene, a carotenoid known for providing protection from cancer. For example, prospective and retrospective epidemio-logical studies indicate an inverse relationship between lycopene intake and prostate cancer risk (vanBreemen RB., Paklpvoc M., 2008).

Scientist investigated the efficacy of rosehip extracts in preventing cell proliferation of three human glioblastoma cell lines. Each line treated demonstrated a significant

decrease in cell proliferation. The rosehip decrease was equal to or better than the decrease of cell proliferation observed when inhibitors of the MAPK or AKT signaling pathways were utilized (Cagle et al., 2012).

Rosehip is loaded with Vitamin C, organic acids, catechins and other flavonoids to help provide strong support for cancer protection.

Blueberry is rich in anthocyanins, which exhibit strong antioxidant and anti-inflammatory properties all important for cancer protection. They have been shown to reduce COX-2, NFkB in the blood, as well as isoprostane, a marker for lipid oxidation.

Anthocyanins from blueberry have demonstrated the ability to inhibit not only the initiation stages of chemically induced carcinogenesis but also the later promotion and proliferation stages (Lila, 2004).

What researchers, McAnulty et al. discovered is that blueberries are strong stimulators for the body's production of the NK cells. It is the job of natural killer cells to provide immunosurveillance for tumors and their eradication (McAnulty et al., 2011; Waldhauer & Steinle., 2008).

Dandelion roots, leaves and flowers providing a diversity of health benefits. The roots stimulate bile flow, the leaves provide a rich supply of chlorophyll, the flowers the pigment lutein, a powerful antioxidant.

Beta Glucan High Potency Synbiotic provides 33 billion cfu/tbl of certified strains of pedigreed probiotic with Therapeutic Foods in a synbiotic formula of *L. acidophilus*, *B. longum*, *L. rhamnosus*, *L. plantarum*, *S. thermophilus* and 5 grams of patented oat bran (75%) with high levels of beta glucan (10%), whole red beet root (15%) and inulin derived from chicory fiber (10%).

Prebiotic: Reactive oxygen species and reactive nitrogen species play an important role in the pathogenesis of many diseases. Beta-glucans participate in the processes of repair, metabolism and detoxification. They counteract the pathological conditions of ROS and RNS (Jurczynska et al., 2012).

Beta-glucans, naturally occurring polysaccharides, are present as constituents of cell wall of cereal grains, mushrooms, algae, or microbes including bacteria, fungi, and yeast. Since Pillemer et al. first prepared and investigated zymosan in the 1940s and others followed with the investigation in the 60s and 70s, researchers have well established the significant role of B-glucans on the immune system relative to cancer treatment, infection, immunity, and restoration of damaged bone marrow (Yoon TJ., 2013).

It is well established that glucans enhance the efficacy of anti-cancer and anti-infection immunotherapy, both in clinical and experimental conditions (Vetvicka V., 2013).

Probiotic: There is a large body of evidence that suggests probiotics reduce the inflammatory response and oxidative stress, as well as increase the expression of adhesion proteins with the intestinal epithelium, reducing intestinal

permeability. The net result of which is the reduction of chronic inflammation, a leading cause for cancer initiating and developing (Bordalo et al., 2016; Kasinska & Drzewowski, 2015; Idzior-Walu & Walus-Miarka, 2015; Yan et al., 2015; Gomes et al., 2014). These selected strains are particularly successful in this endeavor.

Finally, our other probiotic formulas can be considered here in this protocol as well. **High ORAC Synbiotic** provides along with probiotics a collection of powerful berry extracts. So too does our **Cranberry Pomegranate Synbiotic** and our **No. 7 Systemic Booster**.

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We have developed our products based on scientific research and/or the practical experience of many healthcare practitioners. There is a growing body of literature on food based nutrition and supplements and their application in support of our health. Please use our products under the advisement of your doctor.