



BETA-GLUCAN

Natural Cancer Treatment Research
Summary

ABSTRACT

Beta-glucan supports your immune system in all stages of treatment and prevention.

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Forward

The information and contents of www.NaturalCancerReports.com and this special report are based upon scientific, medical, university and health industry research from laboratory, animal and human studies. This information is provided for educational purposes and is intended complement and does not replace the healthcare advice and relationship received from a physician or qualified healthcare professional.

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While www.NaturalCancerReports.com makes every reasonable attempt to conduct a thorough search of the published medical literature, the possibility always exists that some significant articles may be missed.

In summary, you should consult with your doctor or healthcare provider before making

any changes in your health and cancer treatment program. It may be helpful to give this report to your doctors when requesting a change in your cancer treatment program.

I've left some of the scientific and medical terms in this report for your doctors. I'm sorry that they are difficult to understand. In some cases, I've included a link to www.naturalcancerreports.com/Cancer-Terminology.html for an explanation of these words.

The scientific medical research with Beta-glucan and cancer is extensive so often the number references are limited to one per statement in the interest to save space.

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The World Journal of Clinical Oncology (cancer science) believes Beta-glucan may be the most important natural immunomodulator (immune system stimulant).[103]

Beta-Glucan is also known as β -glucan, beta glucan, and beta 1,3/1,6 glucan. Beta-glucans are found in fungus, yeast, mushroom, grain and bacterial cells walls and when consumed by mammals initiate an immune response to fight a wide range of challenges including bacteria, viruses, fungi, and parasites.[8] Beta-glucans attach to several receptors including dectin-1 and complement[69] and activate a group of immune cells including granulocytes[76] macrophages, lymphocytes, T cells, neutrophils, monocytes, natural killer cells and dendritic cells so that they will digest, kill cells[1] and delay the progression of cancer.[18]

Beta-glucans can prevent the development of cancer by stimulating the immune system to remove cancer causing agents and activates dendritic, macrophage and NK cells to help inhibit tumor growth.[2] β -glucans are well-established immunomodulators with strong effects resulting in slowing or even inhibiting cancer growth.[35]

Beta-glucan given to patients with advanced breast cancer showed that tumor regression or significant symptomatic improvements were observed in 73% of breast cancer patients, 67% of lung cancer patients and 47% of liver cancer patients. When beta-glucan was given to the patients receiving chemotherapy, the response rates have improved from 12% to 28%. The clinical status of patients with breast,

prostate, lung, and liver cancers was significantly improved with beta-glucan, while it was less effective on those patients with bone and stomach cancers or leukemias.[9] [10]

All types of cancer patients taking beta-glucan significantly reduced chemotherapy side effects. Beta-glucan may help support optimal immune system cells minimizing chemotherapy side effects. Nausea, hair loss, and low blood cell counts were alleviated in 90% of the patients taking Beta-glucan during chemotherapy. 83% of the patients also reported a reduction in pain.[9] In patients with colorectal cancer receiving FOLFOX-4 their white blood cell counts and platelet counts were better and mucositis and diarrhea is less common in the Beta-glucan treatment group.[41] Beta glucan improves the survival and quality of life in patient's with cancer receiving chemotherapy.[80]

A human trial in 30 women with breast cancer found oral beta-glucan supplement provided significant improvement in the quality of life compared to the women that took the placebo. These women were doing traditional medical breast cancer treatment and added the beta-glucan supplement.[3]

Oral beta-glucan is absorbed and effective in several cancer treatment studies.[72] [3] [73] [62]

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Beta-glucan has been studied successfully in scientific medical research for:

Abnormal PAPs (ASCUS & L-SIL) [34]

B Cell Lymphoma [98]

Bladder cancer [21]

Bone metastasis [29]

Breast cancer [22] [42]

Breast cancer mastectomy drain discharge [43]

Cervical cancer [27] [84] [94]

Chronic lymphocytic leukemia CLL [33]

Chronic myeloid leukemia CML [87]

Colon cancer [46]

Colon cancer prevention (ACF) [44]

Colorectal cancer [54]

Epidermoid carcinoma [23]

Esophageal carcinoma [50]

Fibrosarcoma [95]

Gastric cancer [40] [85]

Head and neck cancer [28] [83]

Hepatitis B virus [6]

HIV (human immunodeficiency virus) [93]

Hodgkin's lymphoma [62]

HPV (human papilloma virus) [5]

Liver Cancer [15] [16]

Leukemia [64]

Lewis Lung Carcinoma [4]

Lung cancer [13] [17]

Lymphoma [97]

Lymphosarcoma [65]

Melanoma [23] [101]

Neuroblastoma [78]

non-Hodgkin's lymphoma (NHL) [62]

Oral squamous cell carcinoma (OSCC) [52]

Osteosarcoma [101]

Ovarian cancer [68] [82]

Pancreatic cancer [38]

Prostate cancer [11] [79]

Renal cell carcinoma [74]

Squamous-cell carcinoma [99]

Stomach cancer [66]

Uterine cancer [88]

Yeast infections during cancer treatment [7]

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Beta-Glucan with Chemotherapy

The Department of Pathology at the University of Louisville states in the drug research journal Anticancer Agents in Medicinal Chemistry “*It is well established that glucans enhance the efficacy of anti-cancer and anti-infection immunotherapy, both in clinical and experimental conditions.*”[47]

Perhaps the most promising evidence to date in human trials has come from medical studies on a benefit of β-glucan on the quality of life and survival when given in combination with chemotherapy cancer treatment [55] [57] [59] [81] [82] [86] and radiation therapy. [84] [92]

Beta-Glucan has been studied successfully in scientific medical research studies with the following chemotherapy drugs:

5-fluorouracil (5-FU, Adrucil®)[27]

Dactinomycin (Actinomycin D®) [53]

Alemtuzumab (Campath®, MabCampath®) [33]

Anti-tumor monoclonal antibodies [49]

AC (Adriamycin + Cyclophosphamide) [39]

Alemtuzumab and rituximab [33]

Bevacizumab (Avastin®)[58]

Carmustine (BiCNU®) [79]

Cetuximab (Erbix®) [31]

Cisplatin (Platinol®)[51]

Cisplatin + Gemcitabine [32] [19]

CMF (Cyclophosphamide + Methotrexate + Fluorouracil (5-FU)) [39]

Cyclophosphamide (Cytoxan®) [53]

Docetaxel (Taxotere®) + Cisplatin [45]

Doxorubicin (Adriamycin®) [53]

ECF (Epirubicin + Cisplatin + Fluorouracil (5-FU)) [39]

Gamma-globulin (IGG) [87]

Gemcitabine (Gemzar®) [36]

Interferon (IFN)[90]

Mitomycin C (Mutamycin®) [91]

Nivolumab (Opdivo®) [102]

Oxaliplatin (Eloxatin™)[16]

PAC (cisplatin, adriamycin and cyclophosphamide)[82]

Paclitaxel (Taxol®, Onxal™) [24]

Paclitaxel + Cisplatin [32]

Pembrolizumab (Keytruda®) [102]

Rituximab (Rituxan®) [33]

S-1 (tegafur/gimeracil/oteracil) [56]

Tegafur [80]

Trastuzumab (Herceptin®) [48]

TS-1 (titanium silicate)[71]

UFT (tegafur/uracil)[75]

Etoposide (Toposar®, VePesid®, Etopophos®) [96]

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Beta-glucan reduces chemotherapy-related toxicities including gastrointestinal reactions, granulocytopenia (low white blood granulocyte cells).[20]

Beta-Glucan with Immunotherapy Monoclonal Antibodies (mAb)

Beta-glucan improves the effectiveness of immunotherapy antibodies by initiating complement receptor 3 (CR3-DCC).[70] The James Graham Brown Cancer Center, Tumour Immunobiology Program, University of Louisville wrote "*Extensive studies in preclinical animal tumour models have demonstrated the efficacy of combined oral particulate yeast beta-glucan with antitumor mAb therapy in terms of tumour regression and long-term survival.*"[72] [77] [78]

Beta-glucan with Radiation Therapy

An animal study of Beta-glucan with radiation therapy by reduced the primary tumor, decreased hair loss and less skin wounds compared to the control group that just received radiation therapy. The combination of beta-glucan with radiation therapy improved length of survival compared to control and radiation therapy only. [25]

In a study of mice with implanted Lewis lung carcinoma beta-glucan decreased the number of lung metastases and prolonged the life span of the mice regardless if they received radiation treatment or not. The addition of beta-glucan to radiation therapy increased both the macrophage infiltration and T-lymphocyte

infiltration in the local tumour and the lung nodules. Beta-glucan treatment increased the suppression of tumour growth associated with radiation treatment.[26]

The 5-year survival of women with cervical cancer was significantly better when they added beta-glucan to their cancer treatment. Beta-glucan improved the effectiveness of radiation treatment and 5-fluorouracil treatment. [27]

52 hospitals in Japan compared the effectiveness of radiation treatment and radiation treatment with beta-glucan. The patients that did both radiation therapy and beta-glucan had significantly better complete tumor response compared to the patients that did only radiation treatment. The beta-glucan group showed a significantly rapid recovery from the decreased lymphocyte counts due to radiotherapy.[30]

A human study found Beta-glucan with radiofrequency ablation increased survival times, tumour necrosis and reduced the recurrence rate of liver cancer.[63]

Additional beta-glucan human cancer radiation therapy (radiotherapy) treatment references: [88] [89] [94] [84] [92] [99] [100]

Beta-glucan with Stem Cell Transplantation

Beta-glucan alone or in combination with granulocyte colony-stimulating factor (G-CSF) mobilizes hematopoietic progenitor cell (HPC) mobilization into the periphery parts of the body.[67]

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Potential False Positive Yeast Test

Even though some beta-glucan supplement sources come from fungus and yeast a high-quality product from a reputable dietary supplement manufacturer has been processed and cleaned and does not contain actual yeast or fungus. Notify your health care practitioner if you are taking a beta-glucan and your doctor suspects that you may have a yeast infection. It possible that a beta glucan dietary supplement may provide a positive blood test for b-D-glucan and your doctor may believe you have a yeast or fungal infection.[14]

Combining Beta-glucan with Supplements

A laboratory cell study by the Department of Pathology, University of Louisville, found the combination of beta-glucan, resveratrol and vitamin C strongly suppressed the growth of breast and lung tumors better than the individual supplements. The combination supplement caused cancer cell death better than either supplement by itself.[102]

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Beta-Glucan Quality & Potential Allergic Reactions

While each source of beta-glucan has its own unique structure of glucose linkages, purified yeast-derived betaglucan from *S cerevisiae* is considered the most effective source. [104] [105] Purity of the product is vital, since protein contaminants can cause untoward immune reactions. XYMOGEN's ImmunotiX is refined to remove most impurities, including proteins and fats that can interfere with uptake and effectiveness. Mannan, a potential trigger of allergic reactions or bowel exacerbation, has been removed.

In My Practice I Use:

ImmunotiX 500mg: 1 capsule 1-2 times daily. Best taken on an empty stomach, no closer than 1 hour prior or 2 hours after food.

You can learn more about beta-glucan and ImmunotiX at [Xymogen](https://www.xymogen.com/formulas/products/88) (<https://www.xymogen.com/formulas/products/88>). If you are a client of mine and you wish to order ImmunotiX click on the "**I Have a Referral Code**" button and enter the following information.

Referral Code: **NCS4ME**

Practitioners Last Name: **Bishop**

Natural Cancer Treatment Appointments

Cancer is a very serious health challenge and it can be overwhelming deciding on the best treatment options.

I'm available to assess, integrate and customize your natural cancer supplement and food program for radiation, chemotherapy and prevention.

Learn more at:

<http://www.naturalcancerreports.com/Alternative-Cancer-Treatment-Appointments.html>

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