

# Enzyme yeast cells in cancer therapy

Article in the German medical journal  
"Der Freie Arzt" ("The Independent Doctor")

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English translation using the translation programme DeepL

**In naturopathic practices and clinics, enzyme-yeast cell preparations have already been used successfully for many years as part of cell regulation therapies as adjuvant therapy for cancer, for cancer fatigue and for immunomodulation of immunocompromised cancer patients.**

## Yeast as an ancient remedy

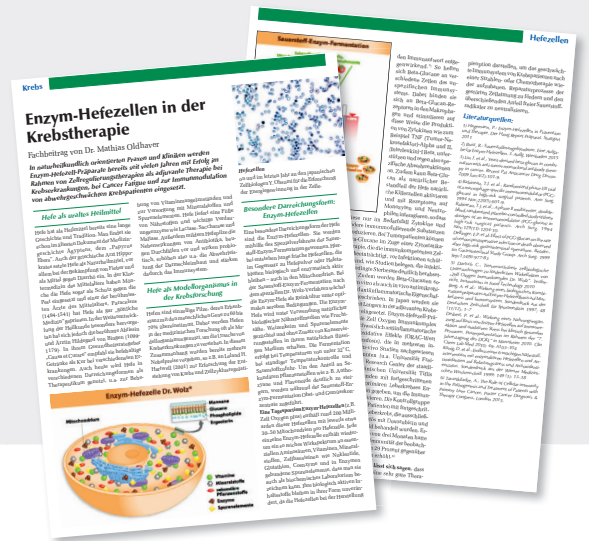
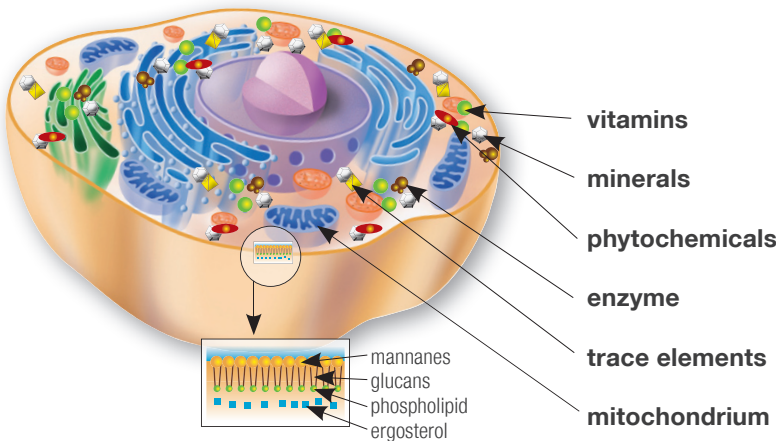
Yeast has a long history and tradition as a remedy. It can be found in the oldest document in the history of medicine in Egypt, the "Papyrus Ebers". The Greek physician Hippocrates also used yeast as a natural remedy, especially to combat fever and as a remedy for diarrhea. In medieval medicine, monks even used yeast as a protection against the plague, and one of the most famous physicians of the Middle Ages, Paracelsus (1494-1541), praised yeast as "divine medicine". However, the famous abbess and physician Hildegard von Bingen (1099-1179) was particularly prominent in the further development of medicine. In her health guide "Causa et Curare" she recommended yeast-containing beverages as a

cure for various diseases. Even today, yeast is used in various forms as a therapeutic agent, e.g. for treating bation of vitamin deficiencies and for the supply of minerals and trace elements. Yeast provides a wealth of nutrients and important digestive enzymes such as lactase, saccharase and maltase. In addition, yeast fungi mitigate the side effects of antibiotics, prevent diarrhea and have a probiotic effect, i.e. increase the defense of the intestinal mucosa and thus strengthen the immune system.

## Yeast as a model organism in cancer research

Yeasts are unicellular fungi whose hereditary substance matches human genes by 60 to 70%. Therefore, yeasts are often used in medical research as a model organism to understand the cause of cancer. In this context, several Nobel Prizes have already been awarded, e.g. to Leland H. Hartwell (2001) for research into the development of cancer and cell cycle regulation, and last year to the Japanese cell biologist Y. Ohsumi for his research into energy production in the cell.

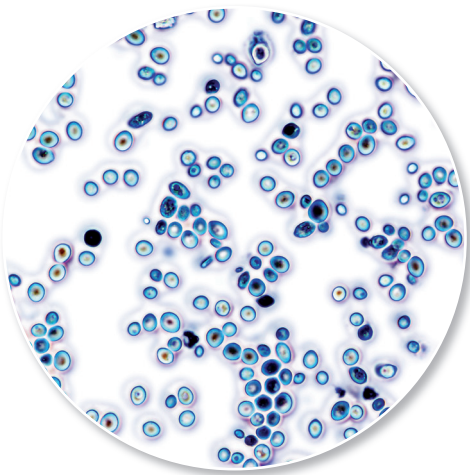
## Enzyme yeast cell Dr. Wolz®



## Special dosage form: enzyme yeast cells

Enzyme-yeast cells are a special form of yeast delivery. They are obtained using the special process of oxygenenzyme fermentation. In this process, young fresh yeast cells are produced which, in contrast to yeast powder or yeast tablets, remain biologically and enzymatically active - even in the mitochondria. In oxygen enzyme fermentation using the special Dr. Wolz

process, the enzyme yeast grows as a pure culture under optimal aerobic conditions. The enzyme yeast is grown using natural biological nutrient media such as fruit juices, wheat germ and trace elements and is maintained in its natural liquid medium without the addition of preservatives. Fermentation takes place at temperatures below 32° C, with constant temperature control and oxygenation. In order to significantly increase the content of secondary plant substances such as anthocyanins and flavonoids, fruit and vegetable concentrates are added during the oxygenenzyme fermentation.

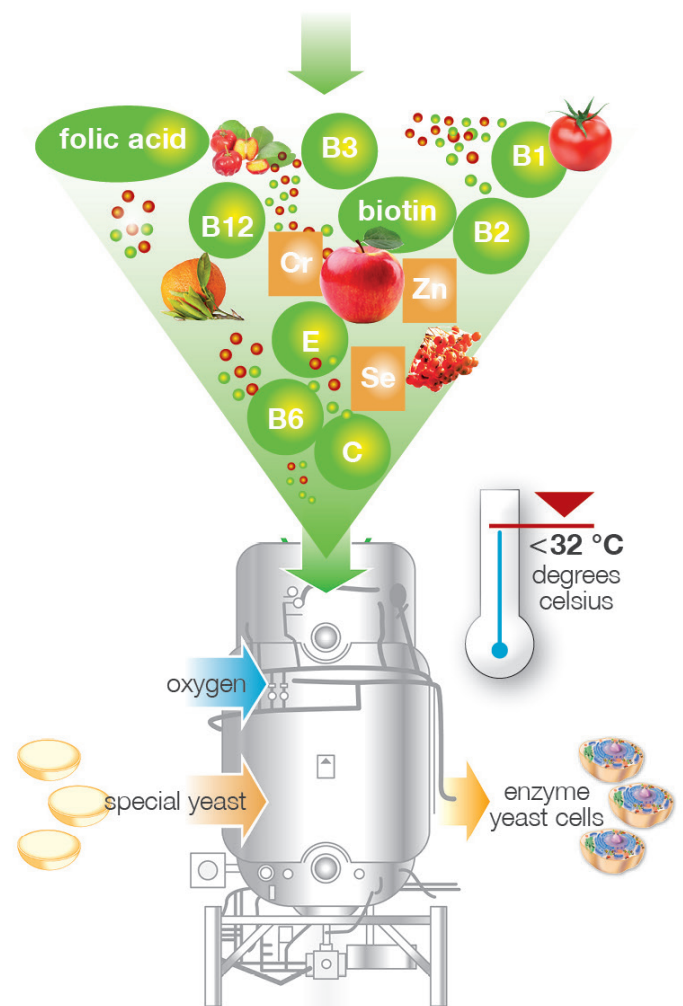


Yeast cells

**A daily portion of enzyme yeast cells** (e.g. Zell Oxygen plus) contains about 200 billion of these yeast cells with about 30-50 mitochondria per yeast cell. Each individual enzyme yeast cell contains such a rich spectrum of essential amino acids, vitamins, minerals, cell components such as nucleotides, glutathione, coenzymes and trace elements bound in enzymes that it can be described as a biochemical laboratory. Their biologically active ingredients remain unchanged in their form, since the yeast cells are not modified during the production process. not be heated. The enzyme yeast cells are present in the preparations in such a way that reproduction in the human body is excluded and the absorption of their micronutrients into the human cells can take place particularly well.<sup>1)</sup>

#### Enzyme yeast cells in adjuvant cancer therapy.

Against this background, the enzyme yeast cell preparations (e.g. Zell Oxygen plus) have proven themselves for more than 45 years, especially as a tonic and restorative for cancer patients who are undersupplied with micronutrients due to malappetence or swallowing difficulties. Enzyme yeast cells provide the necessary building materials for the build-up and regeneration of cellular respiratory enzymes such as porphyrin, cytochrome, cysteine, glutathione, lysine, methionine as well as choline and have a stimulating effect



on cellular respiration.<sup>2)</sup> In addition, they have a metabolic effect on fibroblasts and intestinal flora and have a detoxifying effect on the organism. Enzymeyeast cell preparations (e.g. Zell Oxygen Immunkomplex) are also particularly useful in promoting the immune system of immunocompromised tumor patients because they are characterized by a high content of beta-glucans, which have an immunomodulatory effect, i.e. both stimulating and counteracting an excessive immune response.<sup>3)</sup> Thus, beta-glucans attach themselves to various cells of the non-specific immune system. They bind to beta-glucan receptors in the macrophages and in this way stimulate the production of cytokines such as TNF (tumor necrosis factor)-alpha and IL (interleukin)-I beta, thus supporting and stimulating specific defense reactions. In addition, beta-glucan, as a natural component of yeast, can activate natural killer cells and interact with receptors on monocytes and neutrophils so that they produce cytokines and other immunomodulatory substances only when needed. In tumor patients, beta-glucans can protect against infection in the course of cytostatic therapy, which impairs immunocompetent cells, and, as studies have shown, significantly reduce infection-related mortality.<sup>4)</sup> In addition, beta-glucans are believed to have antimicrobial and anti-inflammatory properties both in vitro

and in vivo. In Japan, they have therefore long been used in adjuvant cancer therapy. Enzyme-yeast cell preparations such as Zell Oxygen Immune Complex have been shown to have antiinflammatory and antioxidant effects (ORAC value 5,500/day dose), which have been demonstrated in several in vitro and in vivo studies (including University of Freiburg).<sup>5)</sup> At the Research Center of Tbilisi State Medical University, enzyme-yeast cells were given to subjects with advanced stages of primary liver cancer to activate the immune response. The control group consisted of 15 patients with advanced forms of liver cancer who were treated exclusively with doxorubicin and cyclophosphamide. Result: Within three months, the cellular immunity of the observed patients had increased by 29 percent compared to the control group.<sup>6)</sup>

In conclusion, enzyme yeast cells are a very good therapeutic option to rebuild the weakened immune system of cancer patients after radiation or chemotherapy, to promote repair processes of the disturbed cellular respiration and to neutralize the excessive amount of free oxygen radicals.

**Literature sources:**

- 1) Hagemann, P.: Enzym-Hefezellen in Prävention und Therapie. Der Haug Report Präparat. Stuttgart 2011
- 2) Buiist, R.: Sauerstoffmangelsyndrom. Eine Aufgabe für Enzym-Hefezellen. 3. Auflg. Wiesbaden 2015
- 3) Liu, J. et al.: Yeastderived beta-glucan in combination with antitumor monoclonal antibody therapy in cancer. Recent Pat Anticancer Drug Discov. 2009 Jun;4(2):101-9.
- 4) Babineau, T.J. et al.: Randomized phase I/II trial of a macrophagespecific immunomodulator (PGG-glucan) in highrisk surgical patients. Ann Surg. 1994 Nov;220(5):601-9. Babineau, T.J. et al.: A phase II multicenter, double-blind, randomized, placebocontrolled study of three dosages of an immunomodulator (PGG-glucan) in highrisk surgical patients. Arch Surg. 1994 Nov;129(11):1204-10. Dellinger, E.P. et al: Effect of PGG-glucan on the rate of serious postoperative infection or death observed after highrisk gastrointestinal operations. Betafectin Gastrointestinal Study Group. Arch Surg. 1999 Sep;134(9):977-83
- 5) Dartsch C.: Tierversuchsfreie zellbiologische Untersuchungen zu förderlichen Wirkeffekten von „Zell Oxygen Immunkomplex Dr. Wolz“. Testbericht. Innovations in Food Technology 2010 Berg, A. et al.: Wirkung eines biologischen Kombinationspräparates auf Enzym-Hefezellbasis auf Muskelstress und Immunsystem. Sonderdruck aus der Deutschen Zeitschrift für Sportmedizin 1997; 48 (11/12): 1-7
- Deibert, P. et al.: Wirkung einer Nahrungsergänzung auf Basis von Enzym-Hefezellen auf Immunreaktion und oxidativen Stress bei klinisch gesunden Personen. Posterpräsentation im Rahmen der "7. Jahrestagung der DGKL" in Mannheim 2010. Clin Chem Lab Med 2010; 49: A103-104
- König, D. et al.: Einfluss einer 6-wöchigen Nährstoffintervention mit enzymaktiven Hefezellen und Antioxidantien auf Belastungsstress und Antioxidantienstatus. Sonderdruck aus der Wiener Medizinischen Wochenschrift 1999; 149 (1): 13-18
- 6) Tavartkiladze, A.: The Role of Cellular immunity in the Pathogenesis and Treatment of Patients with Primary Liver Cancer, Poster Cancer Diagnosis & Therapy Congress, London 2015.

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