

Fermented wheat germ extract



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Related Terms

- 2,6-Dimethoxy-p-benzoquinone, antioxidant biofactor (AOB), Avé©, AVE, Avé®, Avemar® (MSC), Avemar pulvis, catechins, extract of *Triticum vulgare* germ, extract of wheat germ, fermented wheat germ extract (FWGE), flavanoids, MSC, n-octacosanol, octacosanol, octacosyl alcohol, OncoMar™, phytic acid, rutin, *Triticum aestivum* germ extract, wheat bran, wheat germ agglutinin.

Background

- Wheat germ is the nutrient-rich embryo of the wheat kernel, or seed. Wheat germ is high in protein and provides essential vitamins and minerals, such as potassium, iron, B vitamins, zinc, and vitamin E. The wheat germ constitutes approximately 2.5% of the total weight of the wheat kernel.
- Fermented wheat germ extract (FWGE, Avemar pulvis) was invented by Hungarian biochemist Mate Hidvégi in the early 1990s. In the United States, FWGE is marketed as a dietary supplement, Avé®, by American BioSciences, Inc. (Blauvelt, NY). FWGE is manufactured as Avemar® in Hungary, where it is approved as a "medical nutriment" for cancer patients.
- Scientific evidence suggests that FWGE may have anticancer effects. FWGE may also improve immune function-associated conditions such as rheumatoid arthritis and systemic lupus erythematosus.

Evidence

Uses based on scientific evidence

[Grade*](#)

These uses have been tested in humans or animals. Safety and effectiveness have not always been proven. Some of these conditions are potentially serious, and should be evaluated by a qualified healthcare professional.

Chemotherapy adverse effects

C

Limited research suggests that fermented wheat germ extract (FWGE) may improve the adverse effects of chemotherapy. Further studies are required before conclusions may be drawn.

Colorectal cancer

C

Preliminary data suggest that FWGE may improve the overall survival rate of patients with colorectal cancer. Additional well-designed studies are required before a conclusion can be made.

Rheumatoid arthritis

C

Limited research suggests that FWGE may improve joint tenderness and morning stiffness. Additional data are needed before a conclusion may be made.

Skin cancer

C

Preliminary research suggests that FWGE may improve the symptoms of melanoma and overall survival of melanoma patients. Further research is needed before a conclusion can be made.

*Key to grades:

A: Strong scientific evidence for this use;

B: Good scientific evidence for this use;

- C:** Unclear scientific evidence for this use;
D: Fair scientific evidence against this use (it may not work);
F: Strong scientific evidence against this use (it likely does not work).

For full grading rationale, [click here](#).

Uses based on tradition or theory

The below uses are based on tradition or scientific theories. They often have not been thoroughly tested in humans, and safety and effectiveness have not always been proven. Some of these conditions are potentially serious, and should be evaluated by a qualified health care professional

Autoimmune disorders, nutritional supplement, immune system regulation, sunscreen.

Safety

The U.S. Food and Drug Administration does not strictly regulate herbs and supplements. There is no guarantee of strength, purity or safety of products, and effects may vary. You should always read product labels. If you have a medical condition, or are taking other drugs, herbs, or supplements, you should speak with a qualified healthcare professional before starting a new therapy. Consult a healthcare professional immediately if you experience side effects.

Allergies

- Avoid with known allergy or hypersensitivity to fermented wheat germ, its constituents, or wheat products.

Side Effects and Warnings

- Fermented wheat germ extract (FWGE) may have high carbohydrate content and increase blood sugar levels. Caution is advised in patients with diabetes or hypoglycemia and in those taking drugs, herbs, or supplements that affect blood sugar. Blood glucose levels may need to be monitored by a qualified healthcare professional, including a pharmacist. Medication adjustments may be necessary.
- FWGE may increase the risk of bleeding. Caution is advised in patients with bleeding gastrointestinal erosions and other bleeding disorders or those taking drugs, herbs, or supplements that may increase the risk of bleeding. Dosing adjustments may be necessary.
- Use cautiously in patients with organ and tissue transplants, colitis, enteritis, and malabsorption syndrome, as it is possibly unsafe to use in these patient populations.
- Use cautiously in patients using immunosuppressants, as FWGE may alter immune function.
- Use cautiously in children, due to a lack of sufficient safety information.
- Use cautiously in pregnant or breastfeeding women, due to a lack of sufficient safety information.
- Avoid in patients with chronic disease or sensitivity to gluten and fructose, as, according to secondary sources, these patient populations should avoid wheat germ products.
- Avoid with known allergy or hypersensitivity to fermented wheat germ, its constituents, or wheat products.
- **Note:** Fermented wheat germ should not be a substitute for clinical cancer treatment or medications.
- FWGE may cause gastrointestinal side effects, including diarrhea, nausea, gas, feelings of fullness, soft stools, and constipation.

Pregnancy and Breastfeeding

- Use cautiously in pregnant or breastfeeding women, due to a lack of sufficient safety information.

Interactions

Most herbs and supplements have not been thoroughly tested for interactions with other herbs, supplements, drugs, or foods. The interactions listed below are based on reports in scientific publications, laboratory experiments, or traditional use. You should always read product labels. If you have a medical condition, or are taking other drugs, herbs, or supplements, you should speak with a qualified healthcare professional before starting a new therapy.

Interactions with Drugs

- Fermented wheat germ extract (FWGE) may raise blood sugar levels. Caution is advised when using medications that may affect blood sugar. Patients taking insulin or drugs for diabetes by mouth should be monitored closely by a qualified healthcare professional, including a pharmacist. Medication adjustments may be necessary.
- FWGE may increase the risk of bleeding when taken with drugs that increase the risk of bleeding. Some examples include aspirin, anticoagulants (blood thinners) such as warfarin (Coumadin®) or heparin, antiplatelet drugs such as clopidogrel (Plavix®), and nonsteroidal anti-inflammatory drugs such as ibuprofen (Motrin®, Advil®) or naproxen (Naprosyn®, Aleve®).
- FWGE may also interact with anticancer agents, disease-modifying antirheumatic drugs (DMARDs), or immunosuppressants.

Interactions with Herbs and Dietary Supplements

- Fermented wheat germ extract (FWGE) may raise blood sugar levels. Caution is advised when using herbs or supplements that may also

lower blood sugar. Blood glucose levels may require monitoring, and doses may need adjustment.

- FWGE may increase the risk of bleeding when taken with herbs and supplements that are believed to increase the risk of bleeding. Multiple cases of bleeding have been reported with the use of *Ginkgo biloba*, and fewer cases with garlic and saw palmetto. Numerous other agents may theoretically increase the risk of bleeding, although this has not been proven in most cases.
- Fermented wheat germ extract (FWGE) may interact with anticancer herbs and supplements, antioxidants, immunomodulators, or vitamin C.
- **Note:** FWGE should be taken at least two hours before or after consuming any preparation containing vitamin C.

Authors

- This information is based on a professional level monograph edited and peer-reviewed by contributors to the Natural Standard Research Collaboration (www.naturalstandard.com).

Selected References

Natural Standard developed the above evidence-based information based on a systematic review of the available scientific articles. For comprehensive information about alternative and complementary therapies on the professional level, go to www.naturalstandard.com. Selected references are listed below.

1. Balint G, Apathy A, Gaal M, et al. Effect of Avemar--a fermented wheat germ extract--on rheumatoid arthritis. Preliminary data. *Clin Exp Rheumatol* 2006;24(3):325-328.
2. Barabas J, Nemeth Z. [Recommendation of the Hungarian Society for Face, Mandible and Oral Surgery in the indication of supportive therapy with Avemar]. *Orv Hetil* 2006;147(35):1709-1711.
3. Boros LG, Nichelatti M, Shoenfeld Y. Fermented wheat germ extract (Avemar) in the treatment of cancer and autoimmune diseases. *Ann NY Acad Sci* 2005;1051:529-542.
4. Comin-Anduix B, Boros LG, Marin S, et al. Fermented wheat germ extract inhibits glycolysis/pentose cycle enzymes and induces apoptosis through poly(ADP-ribose) polymerase activation in Jurkat T-cell leukemia tumor cells. *J Biol Chem* 2002;277(48):46408-46414.
5. Egészségügyi Tudományos Tanács Elnöksége. [Recommendation of the Health Sciences Council's Presidency regarding the legal prerequisites for the legal use of AVEMAR dietary supplement as a neoplastic agent]. *Orv Hetil* 2007;148(4):173.
6. Farkas E. The role of Avemar in oncology. A review. *Magy Belorv* 2004;(57):4-9.
7. Garami M, Schuler D, Babosa M. Fermented wheat germ extract reduces chemotherapy-induced febrile neutropenia in pediatric cancer patients. *J Pediatr Hematol Oncol* 2004;26(10):631-635.
8. Heimbach JT, Sebestyen G, Semjen G, et al. Safety studies regarding a standardized extract of fermented wheat germ. *Int J Toxicol* 2007;26(3):253-259.
9. Hidvegi M, Raso E, Tomoskozi-Farkas R, et al. MSC, a new benzoquinone-containing natural product with antimetastatic effect. *Cancer Biother Radiopharm* 1999;14(4):277-289.
10. Jakab F, Mayer A, Hoffmann A, et al. First clinical data of a natural immunomodulator in colorectal cancer. *Hepatogastroenterology* 2000;47(32):393-395.
11. Jakab F, Shoenfeld Y, Balogh A, et al. A medical nutriment has supportive value in the treatment of colorectal cancer. *Br J Cancer* 2003;89(3):465-469.
12. Marcsek Z, Kocsis Z, Jakab M, et al. The efficacy of tamoxifen in estrogen receptor-positive breast cancer cells is enhanced by a medical nutriment. *Cancer Biother Radiopharm* 2004;19(6):746-753.
13. Minamiyama Y, Takemura S, Yoshikawa T, et al. Fermented grain products, production, properties and benefits to health. *Pathophysiology*. 2003;9(4):221-227.
14. Saiko P, Ozsvar-Kozma M, Madlener S, et al. Avemar, a nontoxic fermented wheat germ extract, induces apoptosis and inhibits ribonucleotide reductase in human HL-60 promyelocytic leukemia cells. *Cancer Lett* 2007;250(2):323-328.
15. Sukkar SG, Rossi E. Oxidative stress and nutritional prevention in autoimmune rheumatic diseases. *Autoimmun Rev* 2004;3(3):199-206.

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