fermented wheat germ extract

MedGen UID: 330366  •  Concept ID: C1832024  •  Pharmacologic Substance

Synonyms: FWGE extract

Definition
An extract of fermented wheat germ containing a concentrated, standardized amount of methoxy-substituted benzoxazine derivatives with immunomodulatory and potential antineoplastic activities. Fermented wheat germ extract (FWGE) inhibits the activities of several enzymes involved in de novo nucleic acid synthesis and in supplying the dNTP pool required for DNA replication. This agent also induces caspase-3-mediated inactivation of poly(ADP)ribose polymerase (PARP), a key enzyme in DNA repair that is overexpressed in many cancers; cleavage of PARP prevents DNA repair and induces apoptosis. The benzoxazines may contribute to the immunomodulatory effects of FWGE, down-regulating major histocompatibility complex class I (MHC-1) protein on the surface of cancer cells, allowing natural killer (NK) cell surveillance; and up-regulating the expression of intracellular adhesion molecule 1 (ICAM-1) on tumor endothelial cells. [from NCI]

Recent clinical studies
Characterizing the efficacy of fermented wheat germ extract against ovarian cancer and defining the genomic basis of its activity.
Judson PL, Al Saweh E, Marchion DC, Xiong Y, Bicakú E, Zgheib NB, Chon HS, Stickles XB, Hakam A, Wenham RM, Apte SM, Gonzalez-Bosquet J, Chen DT, Lancaster JM

Averyanov, a nontoxic fermented wheat germ extract, attenuates the growth of sensitive and 5-FlUracil/Ara-C cross-resistant H9 human lymphoma cells through induction of apoptosis.
Oncol Rep 2009 Mar;21(3):787-91. PMID: 19212640

Synergistic effect of Averyan on proinflammatory cytokine production and Ras-mediated cell activation.
Telekes A, Kiss-Tóth É, Nagy T, Gwanstrom EE, Küsz E, Polgár T, Reszát A, Döwer SK, Duda E

Fermented wheat germ extract reduces chemotherapy-induced febrile neutropenia in pediatric cancer patients.

Fermented wheat germ extract induces apoptosis and downregulation of major histocompatibility complex class I proteins in tumor T and B cell lines.

See all (5)