



Garlic Oils

Garlic Oils are the oldest kind of manufactured preparation and were first made some 70 years ago, long before research identified the active ingredients we know of today.

Garlic oil is made in two ways, one is derived by steaming crushed garlic and capturing the resultant oil released as the allicin breaks down into sulphides. Steam distilled garlic oil contains fair amounts of DADS and DATS. It takes about a pound of garlic to produce a gram of oil (Pure garlic oil is very potent in odor, and has been used to deter deers & other animals from plantations). Garlic is highly concentrated and very expensive, so vegetable oil is usually added to the garlic oil that goes into the capsules, diluting them to a more digestible concentration. The average garlic oil capsule actually contains about one percent of garlic oil and the rest of its net weight is usually vegetable oil. Steam distilled garlic oil contains oil soluble sulfides that circulate via the lymphatic system and studies indicate to be more anti-tumoric, more immune system enhancing and somewhat antibiotic.

The other way is to crush or chop (macerate) garlic and incubate it 24 hours in vegetable oil, then remove all pieces of garlic. garlic macerate oil contains ajoene, believed to be highly antibiotic and especially good at inhibiting platelet aggregation, and vinylidithiins, which are water-soluble and circulate through the blood system and likely are more beneficial to the heart and circulatory system.

Both oil capsules are very low odor and it would seem to be better to take both since they provide different effects and circulate differently in the body. Both are lower in concentration than properly manufactured garlic powder pills that don't dissolve until they get to the duodenum, but do dissolve there.

Ajoene

Professor Eric Block, Professor and Chair of the Department of Chemistry at State University of New York at Albany, discovered that when garlic is heated in solvents (or solvents mixed with water, but never in water, alone), such as acetone, or vegetable oil, it makes a compound which he named ajoene (pronounced AH-HOE-EEN, Ajo is spanish for garlic). Tests have shown ajoene to be especially effective at preventing blood clotting and thereby minimizing the probability of strokes and thromboses. Ajoene apparently affects the platelet's ability to produce thromboxane, which causes clumping. Only the oil-macerate garlic supplements contain Ajoene. Ajoene is also highly antibiotic and recent studies have shown it to have promise in treating colon cancer.

Effects of organosulfur compounds from garlic oil on the antioxidation system in rat liver and red blood cells.

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The modulation of garlic oil (GO) and three allyl compounds, diallyl sulfide (DAS), diallyl disulfide (DADS) and diallyl trisulfide (DATS), on the antioxidation system in rat livers and red blood cells was examined. Rats were orally administered GO (200 mg/kg body weight), DAS (20, 80 mg/kg body weight), DADS (80 mg/kg body weight) or DATS (70 mg/kg body weight) three times a week for 6 weeks. Control rats received corn oil (2 ml/kg body weight) alone. GO, DADS and DATS treatment significantly increased the glutathione (GSH) content (48-84%) in red blood cells ($P < 0.05$). DATS displayed a greater enhancement than GO and DADS ($P < 0.05$). Hemolysis induced by tert-butyl hydroperoxide was not suppressed by GO or allyl compound treatment although higher GSH content was evident. Hepatic GSH was not influenced by garlic components. In rat livers, DADS and DATS significantly increased the activity of GSH reductase (46 and 54%, respectively) and of GSH S-transferase (GST) (63 and 103%, respectively), but decreased the GSH peroxidase activity (27 and 28%, respectively). In contrast, GSH reductase and GST activities in the DAS group, either 20 or 80 mg/kg body weight, were similar to the control

group. A decrease of GSH peroxidase activity was observed in rats dosed with 80 mg/kg body weight ($P < 0.05$). An increase in GST activity and a decrease in GSH peroxidase activities were also noted in GO-treated rats ($P < 0.05$). In red blood cells, three GSH-related antioxidant enzyme activities were not affected by garlic oil and its organosulfur components. Immunoblot assay showed that, accompanying the increase in hepatic GST activity, GO, DADS, DAS (80 mg/kg body weight) and DATS increased the expression of GST Ya, Yb1 and Yc proteins. Results indicate that GO and three allyl compounds play a differential role in modulation of the GSH-related antioxidant system in rat livers and red blood cells.