



# FAST FACTS ABOUT GARLIC ALLIUM COMPLEX

Numerous scientific studies link consumption of allium vegetables — garlic, onions, chives, leeks, etc. — to lower risks of cardiovascular disease, cancer, and infection. A huge family of sulfur compounds is responsible for the pungent aroma and health benefits of Allium vegetables. GNLD's Garlic Allium Complex is a state-of-the-art, whole-food supplement delivering standardized amounts of allicin, the key health-promoting sulfur compound in garlic, plus other beneficial allium nutrients. Our Targeted Delivery Technology insures that bioactive allicin reaches the intestines, where it delivers optimal benefit.


## WHY GARLIC AND OTHER ALLIUM VEGETABLES?

- Allium vegetables (garlic, onions, chives, leeks, etc.) have been used worldwide for thousands of years as foods, spices, and folk medicines.
- Scientific studies show that allium vegetables support cardiovascular health, lower the risk of certain cancers (especially gastrointestinal), and inhibit harmful microbes.



## WHY GNLD GARLIC ALLIUM COMPLEX?

- **Broad-spectrum, whole-food supplementation.** Garlic Allium Complex features extracts and concentrates from a variety of allium vegetables — garlic, onion, chive, and leek — linked in numerous research studies to good health, and assures your daily intake of diverse, beneficial nutrients from the allium “family.”
- **Unique process to protect natural enzymes.** The enzyme allinase is required for the formation of allicin, the critical sulfur compound responsible for many of garlic's health benefits. GNLD's special technology protects allinase from destruction by stomach acid.
- **Guaranteed allicin content.** Each serving provides 4,200 mcg of active allicin from high-yield garlic extracts. Research studies show that this amount — equivalent to that found in one clove of fresh garlic — effectively promotes health.
- **Nutrient family approach.** Includes not only allicin, but also other bioactive compounds (for example, oil-soluble substances from fresh garlic and onion), which exist naturally in allium vegetables and work together in different ways to benefit health.
- **Targeted Delivery Technology.** Enteric coating maximizes the product's stability and absorption and insures the formation of active allicin in the intestines. As a result, Garlic Allium Complex does not cause repeating or garlic breath!
- **Contains rosemary,** a potent antioxidant herb which helps protect capsule contents.
- **Convenient.** Provides an easy way to reap the benefits of allium vegetables without having to eat a clove of fresh raw garlic every day.

<p><b>SUGGESTED USE:</b> 2 tablets daily.</p> <p>To assure breath freshness, do NOT chew tablets.</p> <p>Garlic phytonutrients help to maintain healthy blood pressure and cholesterol levels. Garlic supports healthy immune responses and normal cell growth and renewal (especially in the gastrointestinal tract).*</p> <p>* These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.</p> <p>Garlic Allium Complex includes the whole food garlic components, alliin and allinase. GNLD's exclusive Targeted Delivery Technology ensures these key components are delivered to the digestive tract, where they react together to produce over 4200 mcg of fresh, active allicin ready for absorption.</p> <p>Distributed by:</p> <p> <b>GNLD International, LLC</b> Fremont, California 94538 U.S.A.</p> <p><b>Golden Neo-Life Diamite International, Ltd.</b> Bridgetown, Barbados, W.I. Kingston, Jamaica, W.I. Port of Spain, Trinidad, W.I.</p> <p><i>Leading edge nutrition since 1958.</i> <a href="http://www.gnld.com">www.gnld.com</a></p>	<p><b>Supplement Facts</b></p> <p>Serving Size 2 Tablets Servings Per Container 30</p> <table border="1"> <thead> <tr> <th colspan="2">Amount Per Serving</th> </tr> </thead> <tbody> <tr> <td>Allium Blend</td> <td>490 mg*</td> </tr> <tr> <td>Garlic Powder and Extract (<i>Allium sativum</i>) (bulb); Onion Extract (<i>Allium cepa</i>) (bulb); Chive Extract (<i>Allium schoenoprasum</i>) (leaves); Leek Powder (<i>Allium porrum</i>) (plant).</td> <td></td> </tr> </tbody> </table> <p>* Daily Value not established</p> <p>Other ingredients: Microcrystalline cellulose, stearic acid, magnesium silicate, food glaze, titanium dioxide, silicon dioxide and rosemary extract. Contains soy.</p> <p>Whole food components from across the allium vegetable family, provide allicin equivalent to a full clove of garlic, S-allyl cysteine and a complete lipid profile of garlic and onion oleoresins.</p> <p>Store in a cool, dry place, away from direct sunlight.</p> <p>NOT SOLD IN RETAIL STORES Available Exclusively From GNLD Distributors</p> <p>Product of France <span style="float: right;">510</span></p>	Amount Per Serving		Allium Blend	490 mg*	Garlic Powder and Extract ( <i>Allium sativum</i> ) (bulb); Onion Extract ( <i>Allium cepa</i> ) (bulb); Chive Extract ( <i>Allium schoenoprasum</i> ) (leaves); Leek Powder ( <i>Allium porrum</i> ) (plant).	
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# THE STORY OF GARLIC AND OTHER ALLIUM VEGETABLES

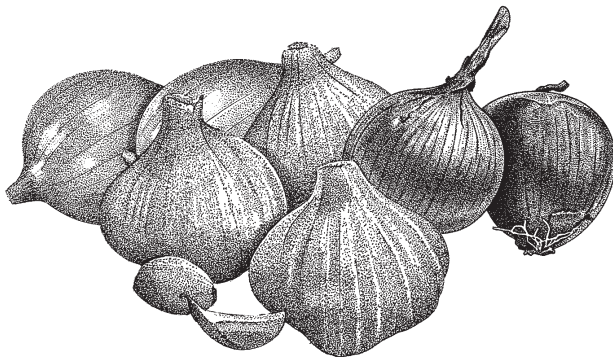
## GARLIC: “THE STINKING ROSE” OR “SPICE OF LIFE”?

*Garlic then have the power to save from death. Bear with it though it maketh unsavory breath.*

— Sir John Harington in “*The Englishman’s Doctor*”

No one is neutral about garlic. While some treasure it for its pungent aroma, others detest it for the same reason. The “stinking rose” is actually a member of the sweet-smelling lily family. It belongs to the allium genus, an acrid-smelling group of vegetables whose odor derives from health-promoting sulfur compounds. Allium vegetables include:

- Garlic (*Allium sativum* L.)
- Onion (*Allium cepa* L.)
- Leek (*Allium ampeloprasum* L. var. porrum)
- Scallion (*Allium fistulosum*)
- Shallot (*Allium ascalonicum* auct.)
- Great-headed (“elephant”) garlic (*Allium ampeloprasum* L. var. holmense)
- Wild garlic (*Allium ursinum*)
- Chive (*Allium schoenoprasum* L.)
- Chinese chive (*Allium tuberosum* L.)
- Rakkyo (*Allium bakeri* Regel)



## ALLIUMS HAVE BEEN PRIZED THROUGHOUT THE AGES

Despite their ability to produce socially undesirable effects (bad breath, belching, flatulence, etc.), allium vegetables — especially garlic — have been prized throughout the ages by virtually every culture as foods, spices, and folk medicines.

Alliums have always been a natural part of the diet. In ancient Egypt, Pharaohs were entombed with garlic and onions to ensure well-seasoned meals in the afterlife. The slaves who built the pyramids ate garlic to prevent parasitic infection and disease and to bestow strength and endurance. In fact, allium vegetables were among the items the Israelites missed most upon their exodus: “We remember the fish,

which we did eat in Egypt so freely, and the pumpkins and the melons, and the *leeks, onions, and garlic.*” (Numbers 11:5).

Whatever global fame allium vegetables have earned in the kitchen, they have far surpassed in the medicine cabinet. Allium vegetables have a complicated chemistry and, as a result, a huge range of effects. The ability of onions to induce tears is one example. Other examples include the antibacterial, antifungal, antitumor, anticlotting, and anticholesterol properties of certain extracts of garlic and onions.

Throughout history, people worldwide — the Chinese, Egyptians, Greeks, Indians, Koreans, Romans, Babylonians, and Vikings — have used allium vegetables to enhance health:

- The Codex Ebers, an ancient Egyptian medical papyrus, lists 22 therapeutic formulas in which garlic was used to treat heart problems, headache, bites, worms, and tumors.
- In Greece, Hippocrates, the Father of Medicine, recommended garlic for its medicinal effects, and athletes ingested garlic as a stimulant during the first Olympic games.
- In India, garlic was used as both an Ayurvedic heart remedy and an antiseptic lotion.
- The French fed garlic and onions to horses suffering from painful blood clots in the legs.
- Eastern and Western cultures alike have used garlic and onion to free the respiratory tract of phlegm, rid the bowels of parasites, and aid digestion.
- Several North American Indian tribes used garlic and onions to relieve the pain of insect stings and prevent or cure scurvy.

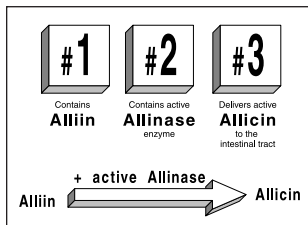
The antimicrobial powers of allium vegetables are renowned. Even very dilute garlic juice is capable of inhibiting bacteria, fungi, and yeast. Onion tea has long been used in China for fever, headache, cholera, and dysentery. In France in 1721, four criminals recruited to bury the dead during a terrible plague were reputed to have gained immunity from the disease by drinking wine containing crushed garlic. In 1858, none other than Louis Pasteur reported that garlic and onion were antibacterial. Later, Albert Schweitzer used garlic alone to treat amoebic dysentery in Africa. Similarly, garlic has been used as a folk remedy in epidemics of typhus, diphtheria, and tuberculosis. And in both world wars, garlic was used as an antiseptic to prevent gangrene.

Contemporary scientists have subjected allium vegetables to serious scrutiny. In 1992, for instance, the U.S. National Cancer Institute embarked upon a major five-year effort to study garlic and other foods that are naturally rich in cancer-preventive substances.



## HUNDREDS OF ACTIVE COMPOUNDS IN EACH BULB

Scientists have yet to credit a single compound as responsible for the benefits of allium vegetables. Garlic, for instance, contains more than 200 different compounds! Of vitamins and minerals, garlic supplies high levels of phosphorus, potassium, sulfur, and zinc; moderate measures of selenium and vitamins A and C; and lesser amounts of calcium, magnesium, sodium, iron, manganese, and B-vitamins.



alliums also contain flavonoids and other antioxidants, essential oils and fatty acids, amino acids, pectin, carbohydrates, and sulfur compounds (notably allicin). Allicin reacts with oxygen to produce more than 70 sulfur

compounds! “It is these materials that are believed to be medicinal,” says David Roser, head of the Garlic Research Bureau in Bury Saint Edmunds, England.

## COMPOUNDS DORMANT UNTIL BULB IS CUT OR CRUSHED

Have you ever wondered why an intact garlic clove or onion bulb is relatively odorless compared to the diced vegetable? The answer is in the chemistry!

In garlic, unbroken cloves contain a stable, odorless chemical called **alliin**, which has no known biological activity. Cutting or crushing garlic, however, causes the release of an enzyme called **allinase**, which quickly converts odorless alliin to **allicin**, the smelly sulfur compound that gives garlic its characteristic scent and taste.

**Allicin**, although very unstable, accounts for:

- most of garlic’s antifungal and antibacterial activity
- most of its antiparasitic action in the intestinal tract
- some of its lipid-lowering and anticlotting effects in the blood
- some of its ability to help protect against cancer.

Within hours, allicin is transformed into **ajoene**, a stable compound with different biological activities than its parent compound. Ajoene confers:

- most of garlic’s anticlotting activity (research shows ajoene is better than aspirin at preventing blood clots!)
- some of its ability to lower triglycerides in the blood
- some of its anticancer activity.

## HEALTH BENEFITS OF GARLIC AND OTHER ALLIUMS

*Every morning, after we do our yoga, we each take a clove of garlic, chop it up and swallow it whole.*

— Sarah L. (age 104) and A. Elizabeth (age 102) Delany in their book *Having Our Say: The Delany Sisters’ First 100 Years*

Since allium vegetables have been used throughout history as folk remedies, they are a natural subject of investigation for modern researchers. In the past century, more than 1,300 research articles have been written about garlic alone! This intense research effort has confirmed many health benefits of

allium vegetables, particularly with regard to heart disease, high blood pressure, gastro- intestinal cancer, and infectious diseases.

Laboratory studies have identified key compounds in garlic and onions responsible for many of their benefits. In addition, population and clinical studies show that regular consumption of allium vegetables is associated with:

### PROTECTION FROM INFECTIOUS DISEASE

- Inhibition of bacterial growth
- Inhibition of fungal growth and yeast overgrowth
- Inhibition of intestinal parasites

### PROTECTION FROM CARDIOVASCULAR DISEASE

- Reduced levels of blood lipids (cholesterol and triglycerides), which in turn lower the risk of stroke, heart attack, and other cardiovascular diseases.
- Inhibition of blood clotting (reduces platelet aggregation and helps dissolve clots)
- Lowered blood pressure. (High blood pressure is a major risk factor for stroke.)

### PROTECTION FROM CANCER

- Decreased risk of cancer, especially gastrointestinal cancer, because they help:

- detoxify carcinogens (cancer-causing substances)
- inhibit the formation of carcinogenic nitrosamines
- activate enzymes that detoxify carcinogens
- inhibit binding of carcinogens to DNA
- inhibit tumor formation, promotion, and growth
- modulate the immune system
- prevent cell damage caused by free radicals

## THE NOSE KNOWS THE POWER OF GARLIC

To reap the benefits of allium vegetables, you have to eat them consistently and in quantities that can cause painful or socially undesirable consequences — bloating, flatulence, heartburn, belching, and bad breath. Allicin, the key to many of garlic’s health benefits, is what makes garlic smell. But sometimes it’s hard to take the good along with the bad. Case in point: Allicin is the subject of two U.S. patents held by its discoverer, Chester Cavallito, but its clinical use as an antibacterial agent was abandoned after a brief trial because of the substance’s odor. Why did Mother Nature produce such foul-smelling chemicals? Since allicin is an antifungal agent, it protects garlic bulbs from decay. And lacrimatory factor, the substance in cut onions that makes people cry, can irritate and repel animals. Scientists believe that these compounds confer a survival benefit to allium plants.

## IF YOU TURN UP YOUR NOSE AT ALLIUMS, YOU MAY BE TURNING YOUR BACK ON GOOD HEALTH

The health benefits of garlic and onions are well known. Yet many people avoid alliums because they don’t like their taste or smell, don’t want garlic or onion breath, or reject these natural health treasures for other reasons. But those who turn up their noses at garlic and onions may be turning their backs on optimal health.



Those who do consume allium vegetables or supplements may find they are not reaping full benefit. Aged garlic, for instance, contains *only 5%* of the active compounds in raw garlic. Cooked or deodorized garlic does not contain significant allicin and thus has little or no antibacterial or antiviral activity. In addition, crushed allium vegetables or supplements without an enteric coating may fail to deliver much allicin.

### GNLD'S GARLIC ALLIUM COMPLEX HAS ALLIUM POWER!

GNLD has long recognized the valuable dietary role that garlic and onions play in promoting optimal health. GNLD scientists developed Garlic Allium Complex as a convenient way of increasing the benefit of garlic and other diverse allium vegetables in the diet. Garlic Allium Complex is an easy alternative to eating a fresh clove of raw garlic every day.

**Broad-spectrum, whole-food supplementation.** No other product boasts as complete a sampling of allium vegetables. Our Garlic Allium Complex contains bioactive portions of garlic, onion, leek, and chive, *plus* the antioxidant power of the herb rosemary.

**Nutrient family approach.** Scientists have yet to identify one ingredient responsible for all of garlic's benefits. In fact, they have shown the opposite: *Many* allium compounds promote health. For this reason, GNLD scientists used whole foods to deliver families of nutrients as they exist in nature. Garlic Allium Complex includes not just allicin, but also other beneficial nutrients (S-allylcysteine, vinidyls, di- and tri-sulfides, etc.) that work together to support health.

**Targeted Delivery Technology.** Laboratory tests prove that enteric-coated Garlic Allium Complex is insoluble in stomach acid. When the capsule reaches the alkaline environment of the intestines, however, it rapidly dissolves to deliver bioactive compounds for maximal stability and absorption. Targeted delivery avoids the breath odor and aftertaste problems that can follow consumption of allium foods.

**Guaranteed high allicin yield.** Our potent formula delivers the highest possible yields of key active compounds responsible for the extensive health-promoting actions of allium vegetables. For example, each dose is guaranteed to deliver 4,200 mcg of allicin, an effective dose used in many research studies (the amount found in a clove of fresh garlic). Exclusive 10X extracts from garlic and onions provide S-allylcysteine and a complete lipid profile of allium oleoresins (equivalent to 1,800 mg fresh garlic and 900 mg fresh onion per dose). These compounds plus chive and leek powders make Garlic Allium Complex potent and diverse.

### GARLIC ALLIUM COMPLEX: ALLICIN IS THE DIFFERENCE!

You may have heard that if a garlic supplement doesn't stink, it's no good, as the lack of odor indicates that allicin, the compound responsible for garlic's characteristic odor and many of its healthful effects, is absent or inactive. *This is not always the case.* In fact, if a garlic supplement stinks a lot, it usually means that the chain reaction leading to the formation of allicin has already begun. In this case, allicin is unlikely to survive the stomach's acidic environment and arrive unchanged in the intestines, where it exerts many of its healthful effects. On the other hand, any supplement that is odorless throughout the entire digestive tract lacks active allicin and as a result will not maximally benefit the body.

GNLD's Garlic Allium Complex targets allicin to the intestines. It avoids the problems of repeating or "garlic breath" while delivering bioactive compounds where they can most benefit the body.

How does GNLD use recent scientific breakthroughs and technical innovations to assure that Garlic Allium Complex delivers allicin? In a sophisticated process that has its origins in freeze-drying, water is gradually removed from allium vegetables at a cool temperature. The remaining powder is rich in alliin (the odorless precursor required to form allicin) and allinase (the enzyme required to convert alliin to allicin). These compounds are encapsulated in an acid-stable enteric coating to protect the enzyme allinase from destruction by stomach acid.

After the beneficial ingredients have passed safely to the alkaline environment of the intestines, the **enteric coating** dissolves, and the contents make contact with water, which allows the allinase to convert alliin to allicin.

### THE GNLD CHALLENGE: DELIVER ALLICIN

GNLD's Garlic Allium Complex is superior to its market competitors, many of whom deliver little or no active allicin. We are so confident that our product is without peer that we dare the competition to brave the "GNLD Garlic Challenge." For a garlic supplement to be effective, it must meet *at least* three criteria:

	<u>GNLD</u>	<u>Competitor</u>
1. It must contain alliin.	✓	?
2. It must contain allinase.	✓	?
3. It must deliver allicin to the intestinal tract.	✓	?

With GNLD, you never have to wonder if your supplement is a global contender. Guaranteed to deliver allicin, Garlic Allium Complex sets the industry standard for quality and efficacy.