MEDIHERB®

Garlic Forte

M1285

Garlic Forte: Active Release

Garlic clove (or bulb) has been used therapeutically for over 3500 years. It is also used in most cultures of the world to provide a distinctive flavor to food.[1,2] There is much written about the history of garlic use. Garlic was fed to laborers in ancient Egypt, perhaps to help them maintain their strength. During some of the earliest Olympic Games (in ancient Greece) athletes were fed garlic before they competed. During the Middle Ages garlic became available in Europe after the Roman legions moved north. Garlic was grown in monasteries during Medieval times. Garlic grew freely in the woods of North America and native Americans used garlic in their tea.[3]*

Garlic constituents: the all important organic sulfur compounds

Garlic is a complex herb, and contains hundreds of constituents. Many of these constituents give garlic its characteristic smell; they are sulfur-containing organic compounds. By 1998 it became apparent from clinical studies that for optimal efficacy, garlic products should contain substantial levels of the important sulfur compound alliin.[4] There are many types of garlic products available on the market: fresh (raw) garlic, dried garlic (garlic powder), garlic oils and aged garlic extract. The range of constituents in these products varies, as does the amount of important constituents. Only raw garlic and very carefully dried garlic powder contain alliin, aged garlic extract does not.[5]*

When a garlic clove is crushed, or when dried garlic powder gets wet the odorless alliin is broken down by the enzyme alliinase. Alliin is then converted into allicin and other strong smelling sulfur compounds.[4]*

Garlic products: is the allicin available for absorption in the body?

Because stomach acid can degrade alliinase, quality garlic powder products should be enterically coated. This type of coating protects the tablet (and the enzyme, alliinase) from being broken down in the stomach. (If alliinase became degraded, allicin would not be produced from alliin.) When enterically coated, the tablet survives intact and enters the intestine. Providing the tablet has a properly formulated coating, it is able to break down in the non-acidic environment of the small intestine and the enzymatic reaction can occur. Allicin is produced and can then be absorbed in the large intestine. If the enteric coating cannot break down in the intestine, allicin will not be produced, and then cannot be absorbed.[2] It is possible in the laboratory to measure the amount of allicin released from garlic tablets. This is called "under *simulated* gastrointestinal conditions."[6]*

Supplement Facts		
Serving size:	1 tablet	
Servings per container:	40	
Amount per Serving		%DV
Calories	2	
Calcium	90 mg	9%
Garlic Bulb 12:1 extract from *Allium sativum* bulb 3.6 g Containing alliin 12 mg	300 mg	†
† Daily Value (DV) not established.		

Other ingredients: Calcium hydrogen phosphate, cellulose, sodium starch glycollate, garlic bulb powder, enteric coating, magnesium stearate, silica and d-alpha-tocopherol.

Caution: Contraindicated in known cases of allergy to Garlic. Contraindicated in lactation. Not to be used during pregnancy unless otherwise directed by a qualified health care professional.

Product No
M1285

Content
40 Enteric Coated Tablets

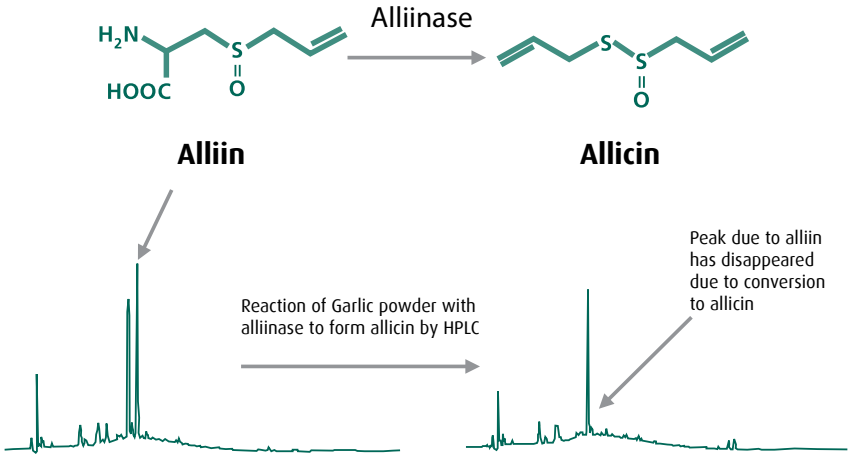
Alliin:	The compound found in raw and carefully dried garlic powder
Allicin:	The active ingredient formed from alliin in the small intestine
Alliinase:	The delicate enzyme required for the conversion of alliin to allicin

Associate Professor Kerry Bone
MediHerb Co-Founder and
Director of Research and Development

A Phytotherapist's Passion

"Philosopher and teacher Rudolf Steiner once said that, for every human illness, somewhere in the world there exists a plant which is the cure. I believe that there is a healing potential locked inside plants which is integral with their evolution, just as it is part of human evolution to learn to tap this wonderful gift of Nature."

* These statements have not been evaluated by the Food & Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.



The top diagram illustrates the chemical conversion of alliin to allicin by alliinase.

The bottom diagram illustrates how the alliin to allicin conversion can be verified using High Performance Liquid Chromatography (HPLC). HPLC is a sophisticated testing method used routinely by MediHerb.

Why use top quality herbal products from a reliable manufacturer?

Consumers need to be confident of the integrity of the herbal manufacturer to ensure that the product contains the stated amount of important constituents. Labels of garlic products that report allicin content are probably reporting *potential* allicin not *actual* allicin. So the amount of allicin delivered to the body is not guaranteed.[2] The amount of alliin converted to allicin can be as little as 10%. Conversion depends on the amount and activity of the alliinase.[7]*

The activity of alliinase may be substantially decreased, for example, by:[8]*

- processing garlic bulb into a powder (eg with the use of heat)
- the presence of other compounds in the tablet
- incorrect disintegration of the tablet (because of its coating)

But there are more quality issues that consumers need to be concerned with, such as:*

- How much alliin is in the raw material?
- Is the enzyme (alliinase) present and able to do the conversion (alliin → allicin)?
- Will the alliinase survive the acidic environment of the stomach (is the tablet enteric-coated?)
- If enteric-coated, will the tablet disintegrate correctly in the intestine liberating the (protected) alliinase, allowing the conversion to occur and providing the allicin for absorption?

How Garlic Forte Keeps You Healthy

Supports cardiovascular system health

Garlic has been used traditionally to support cardiovascular health.[3] Many clinical trials have been conducted to investigate these effects of garlic, but the results are conflicting,[6] probably because of the unknown quality of the garlic products that were evaluated.[1] But more importantly, because the allicin release from the tablets was not known.[6]*

An analysis of the results of 29 placebo-controlled trials to November 2007 found that garlic helps maintain normal cholesterol and triglyceride levels already within a normal range.[9] One of these trials, which found positive results, reported the amount of allicin released from the tablet under simulated gastrointestinal conditions: 9.6 mg of allicin in the daily dose.[5,10] Several trials using top quality garlic tablets published since this date have confirmed this activity.[11-13]*

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The brand of garlic tablet used in most of the clinical trials from 1994 to 2000 was tested by researchers from Utah in 2001. They found that the allicin release under simulated gastrointestinal conditions varied from 14% to 18% of the allicin potential. (Allicin potential is the amount that should be released based on the alliin content.)[5,6] These results strongly suggest that to be effective, garlic tablets need to be standardized for alliin content and release allicin under simulated gastrointestinal conditions.*

Garlic also supports the cardiovascular system in other ways.*

- Double-blind, placebo-controlled trials have shown that allicin-releasing garlic powder helps the blood to have healthy platelet function.[14,15] Healthy platelet function is necessary for a healthy blood flow and the continuing health of the blood vessels.*
- Double-blind, placebo-controlled trials conducted to the end of June 2008 found that standardized garlic powder tablets helped maintain normal blood pressure already within a normal range.[16]*

Standardized garlic powder tablet was also found to improve blood flow to the skin and tissues in healthy volunteers.[14,17]*

Another well-designed trial and further research has found that garlic helps keep the walls of the blood vessels healthy in a similar way to HDL-cholesterol. (HDL-cholesterol is the 'good cholesterol' in your body.)[18,19]*

Promotes health in the gastrointestinal system

Population studies that involved people in Italy and Switzerland (1991–2004) found that garlic in the diet was associated with a healthy gastrointestinal tract (mouth, pharynx, esophagus, larynx and large bowel). The analysis compared the health of people eating high amounts of garlic with those eating none or a low amount.[20] Scientists think that the sulfur compounds in garlic are important for these beneficial effects.[21]*

During World War I garlic was used to help ensure intestinal health in soldiers stationed in the Balkans.[22] In 1941, an American clinician conducted an unblinded, controlled trial and found garlic helped maintain proper gastrointestinal flora in those with a history of poor gastrointestinal function.[23] In a 1991 uncontrolled trial in Egypt, it was found that garlic promoted intestinal health and normal stools in children.[24]*

Enhances immune system response and promotes healthy lung function

During the first century, the official Army physician Dioscorides specified that garlic be taken by Roman soldiers to support a healthy response in the lungs.[25] More recently, garlic has been used traditionally to support healthy lung function. It may do this by stimulating the mucous membranes and promoting healthy secretions in the lung.[26-28]*

In the 1980s Russian newspapers advised the chewing of raw garlic to enhance normal immune response in the upper respiratory tract.[26] In World War II, the Soviet army also used garlic to enhance normal immune response.[29] Volunteers taking a garlic tablet were more likely to stay healthy during the winter months and have healthy respiratory tract function than those taking placebo. This randomized, double-blind study was conducted in England and published in 2001.[30]*

Provides antioxidant support and helps normal metabolic detoxification

Antioxidants help protect cells from the damaging effects of excessive free radicals. Free radicals are highly reactive substances created in the body that may injure cells.*

Garlic taken for 1-2 months improved the level and activity of antioxidant enzymes in the red blood cells of healthy volunteers.[31,32]*

Research suggests that use of garlic supported the body's normal detoxification processes of potentially detrimental dietary substances in healthy volunteers.[33]*

What Makes MediHerb Garlic Forte Unique

Garlic Forte is unique in the professional herbal products industry because:

- The label states exactly how much each tablet contains of the important plant constituent (alliin)
- MediHerb tests the quantity of alliin in garlic raw material
- MediHerb tests that alliinase is present *and active* in garlic raw material
- MediHerb's testing ensures the alliin and alliinase are retained in the product throughout manufacture
- MediHerb's testing also ensures that the alliinase is *protected* from stomach acid by correct enteric coating, and the tablet disintegrates under simulated gastrointestinal conditions to *release* allicin

Unique Manufacture & Analytical Testing

Quality and safety ensured

- Manufactured in Australia to the high standards of international pharmaceutical Good Manufacturing Practice
- Raw materials and finished product are subjected to tough quality standards, including use of the latest and most relevant chemical analysis methods

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Quality is our Passion

MediHerb products are developed by experts and leaders in the field of herbal therapy, using scientific evidence and hundreds of years of traditional knowledge.

Kerry Bone and over 20 health care professionals work within MediHerb while still managing their own clinical practices, plus we consult with an advisory board of health care professionals from around the world.

Our products are made using only the highest quality ingredients which are extensively tested for purity and potency. The MediHerb manufacturing plant operates to a strictly regulated pharmaceutical standard and is regularly audited by the Therapeutic Goods Administration (similar to the FDA), the same body that audits conventional pharmaceutical manufacturing facilities. The comprehensive regulations in Australia mean that you receive a safe and effective product that has been manufactured to pharmaceutical standards.

We know from our experience as health care professionals that the quality of a product you take makes a huge difference to the health outcome you experience. We dedicate ourselves to researching and making the best possible products to deliver health solutions that work.

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