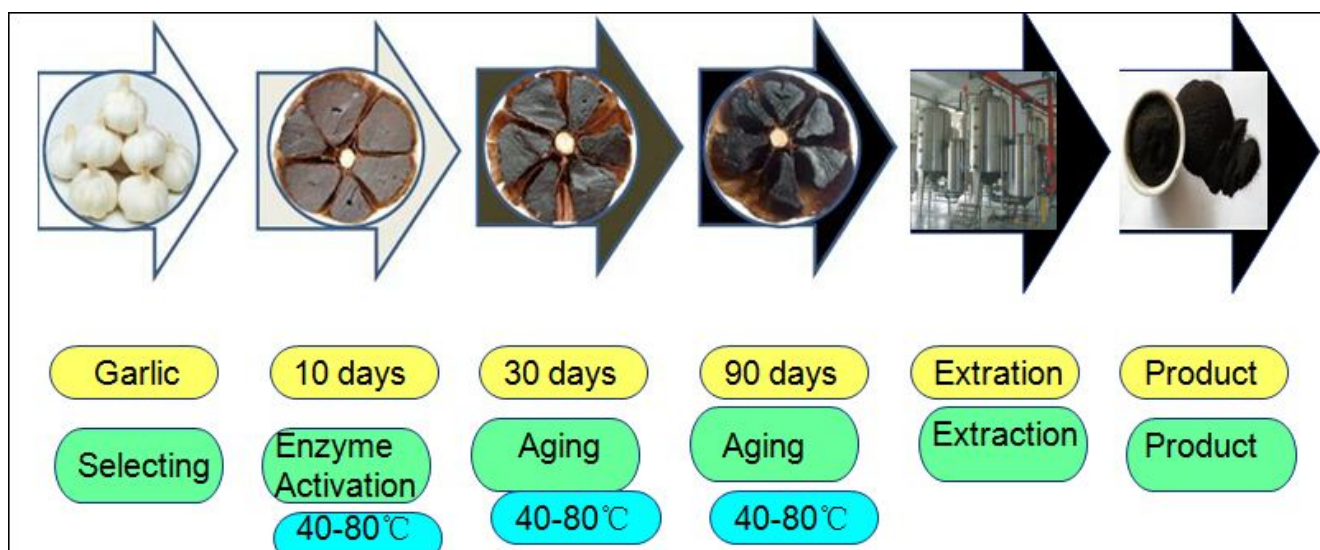


# Aged Black Garlic: Contains higher levels of S-allyl-cysteine (SAC) than raw garlic

Aged Black Garlic was first developed in Korea. Aged black garlic is produced by “fermenting” through the aging of whole bulbs of fresh garlic in a humidity-controlled environment (high humidity (90% RH)) in temperatures of about 140 to 170 degrees F for 30 to 60 days. Even though aged black garlic is considered fermented, it does not in fact involve microbial action, as no fungus or yeast is involved in the aging process.



Instead, aged black garlic fermentation is accomplished naturally by enzymatic reaction, which gives it higher concentrations of antioxidants and reduces the odor associated with raw garlic. This process creates garlic that is black in color, softer in texture and has a more mild taste with a sweet, umami flavor.

Raw garlic v. Black garlic extract

	Raw garlic	Black garlic extract
Moisture	70%	4%
Polyphenols	0.15%	3.2%
S-allyl-cystine(mg/kg)	0.322	5.84
Calcium	5	36.66

Phosphorus(mg)	40	80
Protein	3.3	12.3

(Source: <http://herbnutritionals.com/herbal-extracts/fermented-black-garlic-extract>)

During the aging process, unstable compounds of fresh garlic including alliin are converted into stable compounds including the water-soluble compound s-allyl cysteine (SAC). Since s-allyl-cysteine is water soluble, it is absorbed more quickly and easily by the body. S-allyl-cysteine also assists in absorption of the fat soluble allicin. Aged black garlic contains 5.84mg of SAC as opposed to raw garlic 0.32mg content. This compound is more stable than allicin.

The active components in found in aged black garlic consists of the following:

- **Water Soluble Organosulfur Compounds**
  - S-Allyl-Cysteine (SAC)
  - S-Allylmercaptocysteine (SAMC)
- **Lipid Soluble Organosulfur Compounds**
  - Diallyl sulfide
  - Triallyl sulfide
  - Diallyl disulfide
  - Diallyl polysulfide
- **Antioxidants**
  - Lipid and water soluble Organosulfur compounds
  - N-fructosyl glutamate
  - N-fructosyl arginine
  - N $\alpha$  (1-deoxy-D-fructos-1-yl)-L-arginine
  - Polyphenols (allixin)
  - Selenium
  - Tetrahydro-beta-carbolines

The Table below lists the researched and recognized studies on the health benefits of aged black garlic:

#### Health Benefits of Aged Black Garlic

System	Condition	Benefit	References
Immunity			

System	Condition	Benefit	References
	Anti-Inflammatory		<a href="#">1</a>
	Chemopreventive		<a href="#">2</a>
Metabolism			
	Antioxidant		<a href="#">3</a> <a href="#">4</a>
	Diabetes		<a href="#">5</a>
	Inhibition of hepatic cholesterol synthesis		<a href="#">6</a> <a href="#">7</a>
	Hepatoprotective		<a href="#">8</a>

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Informational References:

[RFI Ingredients - FermaPro® Black Garlic A Complete Antioxidant for Cardiovascular and Immune Health](#)

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Resources:

[Swanson Health Products - 100% Natural Japanese Aged Black Garlic](#)

[Great American Spice Co. - Black Garlic Cloves](#)

[Black Garlic North America](#)

[Dr. Mercola Premium Products - Fermented Black Garlic](#)

[Health Aid America - Black Garlic](#)

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