



AGED BLACK GARLIC WITH **SCIENTIFICALLY
BACKED CARDIOPROTECTIVE EFFECTS**¹⁻²

ABG+[®]
ABG10+ / ABG25+

Best alternative to monacolin K

PHARM[△]ACTIVE
BIOTECH PRODUCTS

Features

- Different standardizations available to adapt to your formulations and necessities. Proven cardioprotective effects¹⁻³.
- Unique organoleptic properties providing a complete sensorial experience.
- 100% traceable and locally-sourced.
- Cultivated, aged and extracted in Spain.
- Halal and Kosher certified.

Cardiovascular diseases are the N°1 cause of death globally, representing 32% of all global deaths⁴.

Bioactive compounds

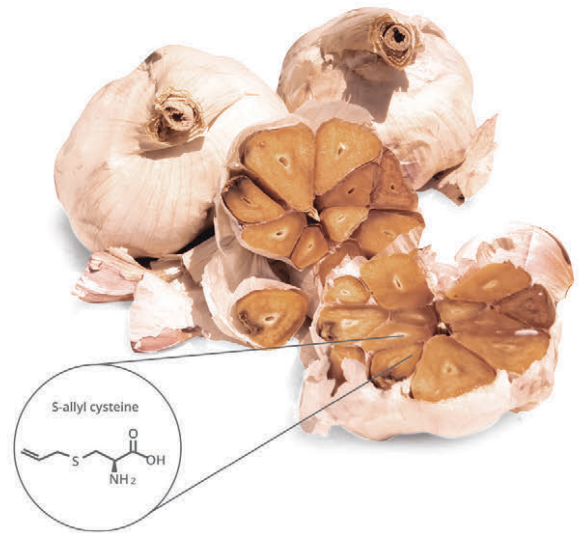
The **ABG10+®** formula is adaptable to customers' needs and galenic formulations, and offers the following standardizations (by HPLC):

- **ABG10+®**: Standardized to **≥0.1% SAC**.
- **ABG25+®**: Standardized to **≥0.25% SAC**.

S-allyl cysteine (SAC) is a highly **stable** and **bioavailable** biomolecule that has been associated with the **inhibition of oxidative damage**. SAC is **not present** in raw garlic⁵⁻⁶.

Differentiated value

- Proven cardioprotective effect¹⁻³.
- Mechanism of action identified *in vitro*¹ and *in vivo*².
- Human clinical study proving cardioprotective effects³.
- DNA-certified for *Allium sativum* L. Spring Violet variety.
- Proprietary ageing process.
- Superior antioxidant capacity.



Cardiovascular function

ABG10+® decreased the coronary perfusion pressure, *ex vivo*¹⁻², improving oxygen and nutrient transport to cardiac tissues.

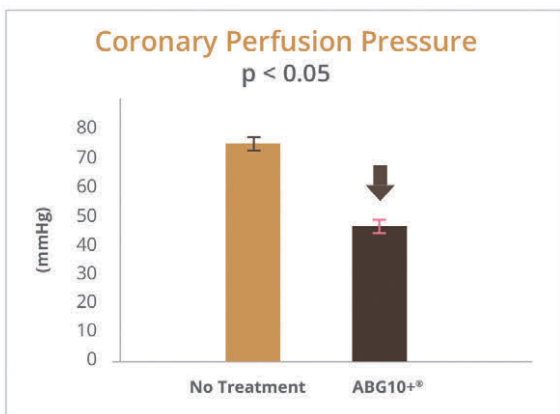


Figure 1: ABG10+® decreased coronary perfusion pressure.

ABG10+® increased heart contraction, pumping a higher amount of blood through the body, *ex vivo*¹⁻².

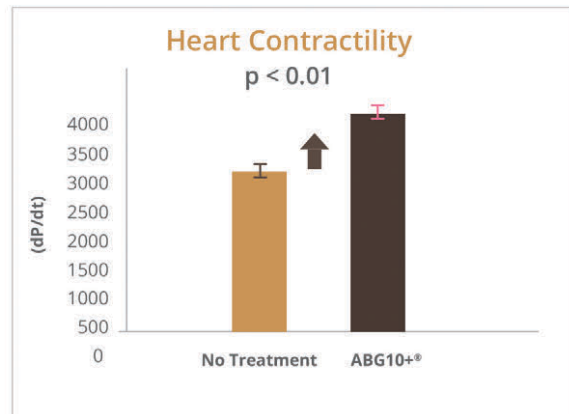


Figure 2: ABG10+® increased heart contractility.

Superior antioxidant capacity

Black garlic shows a **total polyphenols concentration 10-fold higher** than **raw garlic**, which suggests superior **antioxidant capacity**⁷. The antioxidants found in ABG10+® enhance immunity by fighting free radicals, reducing inflammation and preventing oxidative damage to the cells. An in vitro study evaluated the powerful effect on stimulating immunity⁸.

PENDING CLAIMS	
efsa	
Antioxidant	Helps increase the antioxidative capacity of the body Helps increase the pool of antioxidants in the body Strengthens your body's antioxidant capacity/is a source of antioxidants
Cardiovascular system, cholesterol	Maintaining the proper functioning of the heart/maintaining the proper level of cholesterol/maintaining the proper level of homocysteine Supports normal homocysteine levels/supports normal cholesterol levels Contributes to healthy cholesterol/helps control cholesterol/supports circulation

New clinical study

In a **new clinical study** performed with **ABG10+®** during 6 weeks, we **observed a significant reduction on diastolic BP** (Blood Pressure), **similar to dietary approaches including** the Dietary Approaches to Stop Hypertension (**DASH**)⁹ diet on blood pressure that significantly reduced diastolic BP by 3.54 mmHg (95%CI: -4.29, -2.79), or others such as **Mediterranean, low-carbohydrate, Palaeolithic, high-protein, low-glycemic index, low-sodium, and low-fat dietary approaches** for which, together with the DASH approach, have been described as a significant reduction on diastolic BP of -4.85 to -1.27 mmHg¹⁰.

Hypertension

ABG10+® promoted a set of synergic effects that could jointly reduce hypertension caused by obesity, in vivo and in vitro¹⁻².

- Nitric oxide release in endothelial vascular cells¹.
- Increased response to the vasodilator effect of acetylcholine².
- Decreased response to the vasoconstrictor effect of KCL².

Main mechanism of action

ABG10+® multi-target mechanism of action has been described, *in vivo*¹ and *in vitro*²:

- Balancing blood pressure and coronary perfusion pressure.
- Increasing heart contractility, therefore allowing the heart to pump more oxygen and nutrients to the body.
- Providing superior antioxidant capacity, which reduces the risk of CVDs.

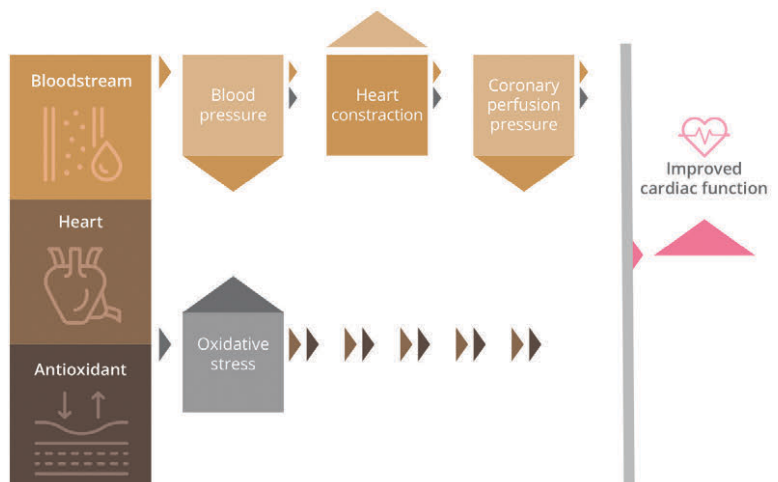


Figure 4: Multitarget mechanism of action of ABG10+®.

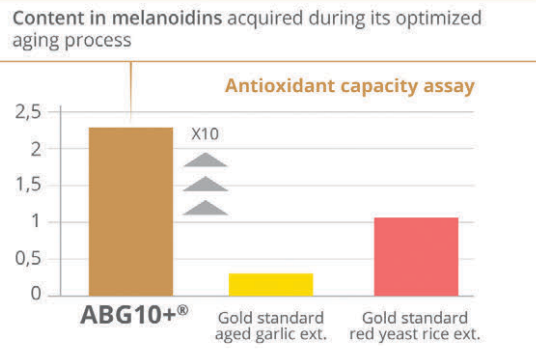


Figure 3: Antioxidant activity measured by the free radical DPPH scavenging method.

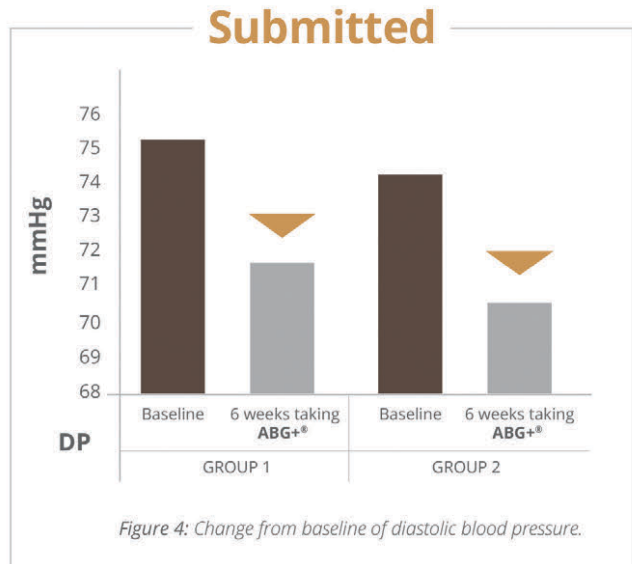


Figure 4: Change from baseline of diastolic blood pressure.

Food-to-fork traceability: ABG+® is 100% traceable

Proprietary fields

- We cultivate garlic in **specially selected fields located in Castilla la Mancha, under exceptional conditions**, supporting local and sustainable agriculture.
- The key to getting **ABG+®** unique features is to harvest the bulbs exactly when the concentration of SAC is higher.
- We grow high quality garlic, which provides with better organoleptic properties than regular white garlic.
- Aged Black Garlic is a unique product in the world, not only because of its **potential organoleptic properties**, but for its recognizable **liquorice smell and soft texture too**.
- Its sweet and balsamic nuances provide the authentic **"umami" experience** and make it an ideal product for high-profile cuisine and food supplementation.



Image of real fields and raw garlic used for ABG10+® and ABG25+® products.

Proprietary ageing process

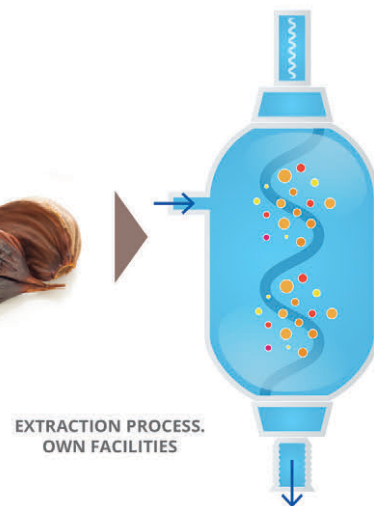
- **ABG+10®** is obtained from fresh garlic, through Pharmactive´s proprietary process. An exposure to optimal temperature and humidity conditions promotes complex biochemical modifications in the bulb.
- Thanks to the changes in the content of biomolecules, the ageing process makes it possible to eliminate the characteristic **unpleasant taste and smell of raw garlic**⁸.
- The resulting black garlic bulbs are used to produce a unique black garlic extract, with potent cardioprotective effects^{1,2}.
- **There are no additives, preservatives, or burning of any kind during the process.**



100% CONTROLLED HARVESTING



PROPRIETARY AGEING PROCESS



EXTRACTION PROCESS. OWN FACILITIES

References

(1) García-Villalón AL., et al. *Journal of Functional Foods*. 2016. 27: 189-200. (2) Amor S., et al. *Nutrients*. 2019; 11, 153. (3) Human Clinical Study, Pending to publish; (4) *World Health Organization. Global Health Observatory (GHO)*, 2019. (5) Munday JS., et al. *Atherosclerosis*. 1999. 143, 399-404. (6) Ried K., et al. *Maturitas*. 2010. 67, 144-150. (7) Kim, J. H., et al. *International journal of food science & technology*, (2012) 47(6), 1176-1182.; (8) Purev U, et al. 2012 Aug; 34(4):651-60. Epub 2012. (9) Saneei P et al., 2014.(10) Schwingshackl L, et al.,2019.

Botanical info

Botanical name: *Allium sativum* L.

Family: *Liliaceae*.

Common name: Aged black garlic.

Part of the plant: Bulb.

Recommended daily dose

ABG10+® (standardized to 0.1% SAC by HPLC):
250 mg/ day.

ABG25+® (standardized to 0.25% SAC by HPLC):
100 mg/ day.

Both products available in organic version.

Other info

Shelf life: Two years*.

Non-GMO. Non-Irradiated.

MOQ: 25 Kg.

Water-soluble.

Multiple applications. Accurate for food matrices.



*When stored at room temperature, sheltered from light and moisture.



GENUINE SPANISH ALLIUM SATIVUM L. VIOLET VARIETY

STANDARDIZED TO
≥0.1% SAC BY HPLC

STANDARDIZED TO
≥0.25% SAC BY HPLC

ABG10+
ABG10+
organic

ABG+®

Concentrated
ABG25+®



Contact us

HEADQUARTERS AND MANUFACTURING PLANT

Ave. Del Dr. Severo Ochoa, 37, Local 4J.

28108 Alcobendas, Madrid (Spain).

+34 91 112 38 48

QC AND R&D LABORATORIES

Calle Faraday, 7, 28049 Madrid (Spain).

+34 91 112 38 48

info@pharmactive.eu www.pharmactive.eu

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PHARM  CTIVE
BIOTECH PRODUCTS

a natural difference