



springsbio
SPRINGS BIOTECHNOLOGY CO., LTD.
春泉生技開發股份有限公司

Product Technical Information

Handbook V.1.1

**Amino acid foods fuel up for
the future.**

Healthy Amino Acids

L-Arginine

L-Arginine 500 mg



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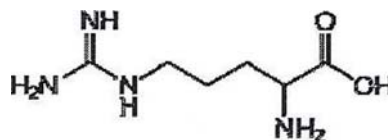
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<http://www.springsbio.com>

Name: L-Arginine																							
Composition: arginine, lactose	<table border="1"> <tr> <td colspan="2">Nutrition facts</td> </tr> <tr> <td colspan="2">This product contains 60 servings.</td> </tr> <tr> <td colspan="2">Each serving (1 capsule)</td> </tr> <tr> <td>Arginine</td> <td>500 mg</td> </tr> <tr> <td>Calories</td> <td>2.8 Kcal</td> </tr> <tr> <td>Protein</td> <td>0.6 g</td> </tr> <tr> <td>Fat</td> <td>0 g</td> </tr> <tr> <td>Saturated fat</td> <td>0 g</td> </tr> <tr> <td>Trans fat</td> <td>0 g</td> </tr> <tr> <td>Carbohydrates</td> <td>0.1 g</td> </tr> <tr> <td>Na (sodium)</td> <td>0 mg</td> </tr> </table>	Nutrition facts		This product contains 60 servings.		Each serving (1 capsule)		Arginine	500 mg	Calories	2.8 Kcal	Protein	0.6 g	Fat	0 g	Saturated fat	0 g	Trans fat	0 g	Carbohydrates	0.1 g	Na (sodium)	0 mg
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Nutritional information: Content: capsule; 500 mg x 60 capsules																							
Advice on use: <ol style="list-style-type: none"> General care: 2 capsules/day, before bedtime Reinforced care: 6 capsules/day, before each meal 																							
Precautions <ol style="list-style-type: none"> Keep in a place away from direct exposure to sunlight and high temperatures or humidity during storage Use in pregnant women and children under the age of 3 is not recommended. 																							
Main features and purpose: <ol style="list-style-type: none"> Boosts kidney metabolism and improves physical circulation. Stimulates the release of the most important hormone to help the human body fight against aging - growth hormone. Reduces the content of fat in adipose tissues and increases muscular mass. Reduces time needed for wounds to heal (particularly bones) Increases the action of macrophages and improves the immune system. Improves the sensitivity of insulin and regulates blood sugar. Helps lower blood pressure and decreases the risk of heart disease. Treats erectile dysfunction to boost sexual performance while at the same time improving the production and activity of sperm 																							

I. Introduction to L-Arginine

Arginine is a type of dual-property amino acid that can carry positive electrodes in a neutral, acidic, or basic setting and can form multiple hydrogen bonds. The molecular formula is $C_6H_{14}N_4O_2$ - and the molecular weight is 174.2 g/mol. It is one of the 20 kinds of natural amino acids. When classified according to the human body development stage and health condition, it is a semi-essential amino acid (or conditional essential amino acid).



The molecular structure, the electric charge distribution, and the ability to form multiple hydrogen bonds of arginine make it capable of binding to molecules carrying negative electric charge. Therefore, Arginine, in the surroundings of protein, can interact with protein in a charged setting. Within the protein, peptidylarginine deiminase can turn arginine into citrulline. Methyltransferase, on the other hand, can turn arginine methylated.

Arginine is something that can be synthesized inside the human body except that the synthesized amount is insufficient to support the natural use in the human body and hence additional intake from the diet is required. Arginine is synthesized inside the human body by citrulline through argininosuccinate synthetase (ASS) and argininosuccinate lyase (ASL). The process is quite energy-consuming because it is required to hydrolyze adenosine triphosphate (ATP) into adenosine monophosphate (AMP) in order to synthesize each molecule into arginine. That is equivalent to two ATPs in the epithelial cells of small intestines. Under the assistance of renal tubular cells, then, it is extracted and turned into arginine. In other words, if small intestines or the kidney is impaired, the internal synthesis into arginine decreases and dietary supplementation needs to be enhanced relatively. The food intake needs to include anything that contains protein, such as meat, livestock, dairy products, and fish, etc. Foods that contain excessive arginine include chocolate, peanuts, and walnuts.

II. Features and Purposes of L-Arginine

- Promotes synthesis into nitric oxide (NO)
 - Arginine is the source of NO inside the human body - it exercises three different types of function depending on where it is generated:
 - ◆ When it is generated in the endothelium of the blood vessel, it relaxes the smooth muscle and accordingly dilates the blood vessel. Therefore, it can bring down high blood pressure - when applied to the corpus cavernosum penis, on the other hand, it boosts penile erection.
 - ◆ When it is generated at the synapse, it serves as the neurotransmitter and is related to learning and memory in the brain.
 - ◆ When it is generated in macrophages, it can damage tumor cells, kill them, or inhibit their growth.
- Promotes secretion of growth hormone

- It is indicated in a paper of a study investigating muscle training for men that arginine can boost the production of growth hormone in the human body. A high dose of arginine (10 g/day and above) can boost secretion of growth hormone- exercising the effect of correcting growth delay. Supplementing arginine is proven in animal studies to be capable of boosting the formation of muscle. Arginine is the raw material inside the human body for synthesis of creatine. Creatine can boost formation of lean meat and reduce the ratio of adipose tissues. Arginine is the direct precursor [nitric oxide](#), urea, ornithine, and butylamine (the substance that can directly give rise to the latter) and is an important element for synthesizing creatine.
- Helps wounds heal
 - Arginine is a precursor to L-ornithine and L-proline-Proline is an important element underlying collagen. Supplementing arginine significantly helps with recovery from serious trauma and burns that require repairs of excessive tissues. Meanwhile, it works to reduce chances of infection and inflammation. It is also a precursor to anti-oxidants and serves as nutritional supplement for patients with cancer. It helps repair tissue damage in the human body as a result of medical procedures such as chemotherapy and radiotherapy.
- Helps boost the quantity and activity of sperm
 - Arginine has been proven in multiple medical studies to be capable of correcting sexual dysfunction and of effectively increasing the quantity and activity of sperm in the clinical setting. Multiple clinical studies conducted among infertile couples due to undesirably active and insufficient sperm have revealed that daily intake of 3-5 g arginine that lasted for half a year contributed to around 20 ~ 35% of the participating couples successfully getting pregnant.
- Boosts immunity and suppresses replication of virus
 - Arginine can effectively enhance immunity, boost secretion of natural killer cells, macrophages, Interleukin-1, among other intrinsic substances, by the immune system and hence is conducive in the fight against cancer cells and prevention against viral infection. The low-ratio relationship between arginine and Lysine is one of the ways to treat herpes virus.
- Improve cardiovascular condition
 - Arginine also exercises the anti-oxidation effect. It can reduce oxidation of low-density lipoprotein (LDL), contributing to inner lacteal sedimentation of the blood vessel and accordingly minimizing chances of blockage of small blood vessels inside the heart to result in myocardial necrosis. Meanwhile, it is clinically proven that supplementing 1000 mg (1g) of arginine in the morning and in the evening can effectively reduce the incidence of angina.

- To sum up, Arginine has the following primary features and purposes:
 1. Boosts kidney metabolism and improves physical circulation.
 2. Stimulates the release of the most important hormone to help the human body fight against aging - growth hormone.
 3. Reduces the content of fat in adipose tissues and increases muscular mass.
 4. Reduces time needed for wounds to heal (particularly bones)
 5. Increases the action of macrophages and improves the immune system.
 6. Improves the sensitivity of insulin and regulates blood sugar.
 7. Helps lower blood pressure and decreases the risk of heart disease.
 8. Treats erectile dysfunction to boost sexual performance while at the same time improving the production and activity of sperm.

III. Advice on use

Indication:

1. Long-term exhausted people and people wishing to boost their physical strength
 2. Dogs and cats that are weak
 3. Cardiovascular condition of general care
 4. People with regulating
 5. People with sleep disorder
- General care: 2 capsules/day, before bedtime'
 - Reinforced care: 6 capsules/day, before each meal

IV. Precautions

1. Intake on an empty stomach is recommended as it works better.
2. Generally speaking, the health-preserving dose of arginine is consistently below 10g.
3. Do not exceed 15 g/day for the dose of arginine. An overdose is likely to trigger nausea, abdominal pain, or diarrhea.
4. Emphasis on the aphrodisiac effect is not recommended.