

L-Arginine 1,000 mg

TECHNICAL SUMMARY

Arginine is a conditionally essential basic amino acid involved primarily in urea metabolism and excretion, as well as in DNA synthesis and protein production.* It is an important precursor of nitric oxide (NO) and thus plays a role in the dilation of blood vessels.*

Structure Formula:

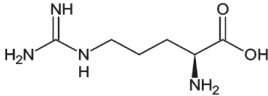


Figure 1: L-Arginine

Chemical Name: 2-amino-5-guanidinovaleric acid.

Allergen and Additive Disclosure: Not manufactured with wheat, gluten, soy, milk, egg, fish or shellfish ingredients. Produced in a GMP facility that processes other ingredients containing these allergens.

Delivery Form: Tablets

ROLE AS NUTRIENT/FUNCTION

L-arginine is a conditional amino acid involved in many important physiological processes including urea metabolism and excretion, DNA synthesis, protein production, oxidative defense and hormone secretion.* Arginine is also a nitric oxide (NO) precursor; its role in this process will be detailed here.*

NO is synthesized using arginine and oxygen via various nitric oxide synthase enzymes.* NO generated from L-arginine is a highly reactive radical gas and an important messenger molecule that is involved in functions as diverse as neurotransmission, vasodilation, biological stress regulation, and modulation of gene expression.* At low concentrations, NO produced in the blood vessel wall (endothelium) also mediates several biological processes such as vasodilation, platelet activation, regulation of monocyte and leukocyte adhesion, regulation of smooth muscle cell proliferation and the control of vascular oxidative stress, as well as the expression of redox-regulated genes.*

NATUROKINETICS®

Liberation: The disintegration of L-arginine tablets using a USP testing method of disintegration occurs between zero and 60 minutes.

Absorption: Orally administered L-arginine is rapidly and almost completely absorbed by the intestinal brush border membrane via active uptake by the intestinal transporter system for cationic amino acids.

Distribution: Pre-clinical data suggest that L-arginine is mainly found in the skin, liver, small intestine and stomach.

Metabolism: Arginine is rapidly and extensively metabolized in the intestine (enterocytes) and to a lesser extent in the liver. Arginine is metabolized to citrulline and NO (via arginine deaminase and NOS), ornithine and urea (via arginase as part of the urea cycle), creatine, agmatine (via arginine decarboxylase), and dimethylarginine (via arginine-N-methyltransferase).

*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.

Supplement Facts

Serving Size 1 Tablet

Amount Per Serving

L-Arginine (from L-Arginine HCl) 1 g (1,000 mg)*

* Daily Value not established.

Other ingredients: Hydroxypropyl Cellulose, Microcrystalline Cellulose, Vegetarian Coating [hypromellose (cellulose), calcium carbonate, mct oil (medium-chain triglycerides) (from coconut/palm kernel oil), xylitol], Stearic Acid (vegetable source), Croscarmellose

- **Conditionally Essential Amino Acid**
- **Nitric Oxide Precursor***

SUGGESTED USAGE: Take 1 tablet twice daily as needed, or as directed by your healthcare practitioner. Take between meals or at bedtime with at least 8 oz. of water or juice to facilitate absorption.

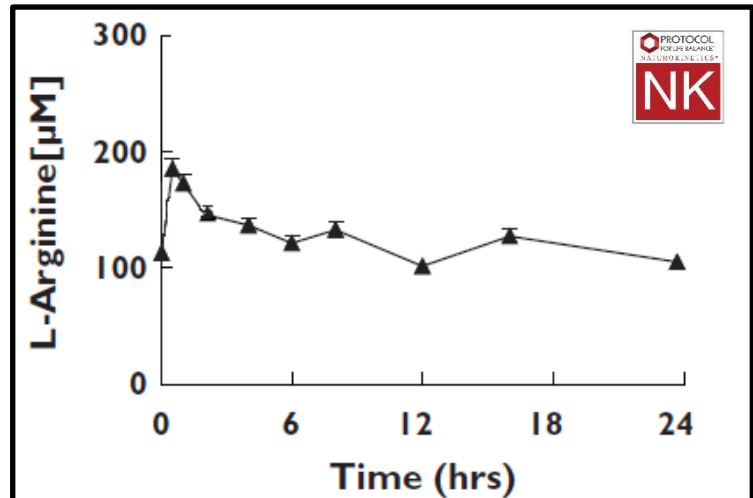


Figure 2: Plasma concentration of L-arginine after 1 week of 1.0g t.i.d arginine in healthy volunteers.

Elimination: The half-life of L-arginine is 1 to 2 hours after oral administration. Unmetabolized L-arginine is excreted in urine, but is almost completely reabsorbed.

CLINICAL VALIDATION

L-arginine supplementation and its impact on endothelial function have been extensively evaluated in clinical studies.

- In a clinical study with 51 healthy male volunteers (four groups divided by age and physical activity) receiving 900 mg of L-arginine in a one-day study, the skin laser Doppler flux (LD flux) was measured in microvessels before and after ingestion of L-arginine. In the group of young trained men, authors observed a significant increase in LD flux following ingesting L-arginine.*

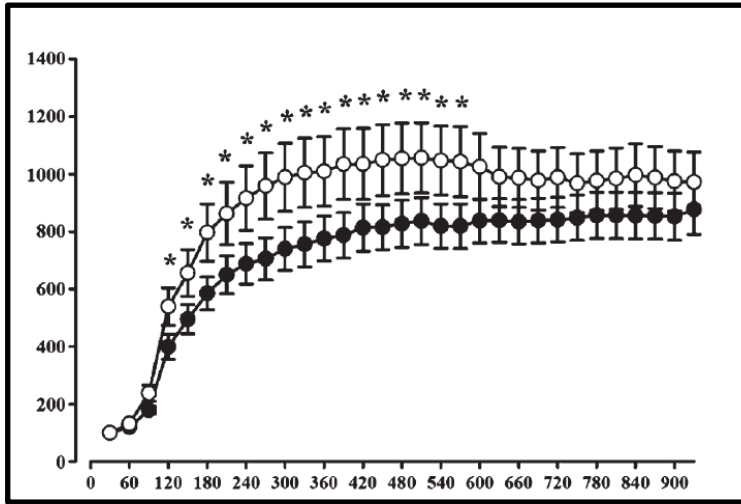


Figure 3: Relative LD flux response in % to acetyl choline applied via iontophoresis before (dark circle) and after ingestion of L-arginine in young trained male volunteers (white circle). * p<0.05 between groups.

Interaction with Lab Tests: None known.

STORAGE

Store in ambient conditions in tightly sealed container. Temperature 56-86° F and <55% relative humidity.

SAFETY INFORMATION

Tolerability: L-arginine is generally well tolerated when ingested as a supplement in doses up to 30 g/d, in addition to a typical diet that provides on average at least 5 g/d of arginine through food. Mild GI discomfort may occur in a small subset of individuals ingesting large amounts of arginine as supplement.

Caution: L-Arginine is intended to be used by healthy adults. Caution is advised for use in individuals with asthma, kidney disease, liver disease, herpes virus, glaucoma, established coronary artery disease, low blood pressure and before surgery, as it may lower blood pressure and possibly affect blood coagulation.

Contraindications: Established allergy to arginine. Arginine is normally found in foods with daily ingestion from food at levels above the recommended suggested usage for this product. However, for pregnant or nursing women, the safety has not been formally evaluated for a diet supplemented with arginine and citrulline. Therefore, caution and medical supervision is suggested. Do not use in the case of history of myocardial infarction.

INTERACTIONS

Drug Interactions: Because of its function as a NO precursor, blood pressure should be monitored in individuals taking antihypertensive medication.

Pre-clinical data suggest that L-arginine may affect blood coagulation. Individuals taking anticoagulant medication should have their coagulation monitored when L-arginine supplementation is implemented.

Preliminary research suggests that L-arginine may impact glucose metabolism. Individuals taking antidiabetic medication should have their blood sugar levels monitored at the beginning of L-arginine supplementation.

Supplement Interactions: Supplements affecting blood pressure, coagulation, or blood sugar levels should be used cautiously when combined with L-arginine.

*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.