

L-Lysine

DESCRIPTION

L-Lysine, provided by Douglas Laboratories, supplies 500 mg of the amino acid in each capsule.

FUNCTIONS

Amino acids have many functions in the body. They are the building blocks for all body proteins – structural proteins that build muscle, connective tissues, bones and other structures, and functional proteins in the form of thousands of metabolically active enzymes. Amino acids provide the body with the nitrogen that is essential for growth and maintenance of all tissues and structures.

Proteins and amino acids also serve as a source of energy, providing about 4 calories per gram.

Aside from these general functions, individual amino acids also have specific functions in many aspects of human physiology and biochemistry.

Lysine is required for collagen cross-linking. Collagen cross-linking is important for resiliency and elasticity of the collagen and elastin present in all connective tissues and blood vessel walls. During formation of new collagen, fibroblasts secrete immature collagen strands and a vitamin C- and copper-requiring enzyme, lysyl oxidase. Lysyl oxidase oxidizes the free amino group of the immature collagen's lysyl side chains. Once oxidized, these lysyl side chains spontaneously engage in various reactions between collagen strands to bring about cross-linking. As a result, a complex network of collagen strands is formed, providing elasticity and resiliency.

Another important role of lysine is its precursor function for L-carnitine. L-carnitine is necessary for fatty acid metabolism and energy production in cardiac and skeletal muscle. It is involved in fatty acid oxidation as part of the carnitine shuttle. L-carnitine shuttles fatty acids from the cytosol (the cell fluid) into the mitochondria (the cell's powerhouses) for oxidation and energy production.

Dietary lysine is present in the form of proteins, mainly

from dairy and animal origin. Vegetarian diets tend to provide little lysine, because vegetable proteins, including legumes, are often low in lysine.

INDICATIONS

L-Lysine capsules may be a useful nutritional adjunct for individuals who wish to supplement their diets with significant amounts of L-lysine.

FORMULA (#7944)

1 Capsule Contains:

L-Lysine 500 mg

SUGGESTED USE

Adults take 1 capsule daily or as directed by a physician or health care professional.

SIDE EFFECTS

No adverse side effects reported.

STORAGE

Store in a cool, dry place, away from direct light. Keep out of reach of children.

REFERENCES

King PA. Effects of insulin and exercise on amino acid transport in rat skeletal muscle. *Am J Physiol Cell Physiol* 1994;266:C524-C530

Millward J. Can we define indispensable amino acid requirements and assess protein quality in adults. *J Nutr* 1994;124 Suppl.1509S-1516S.

Price GM, Halliday D, Pacy PJ, Quevedo MR, Millward DJ. Nitrogen homeostasis in man: Influence of protein intake on the amplitude of diurnal cycling of body nitrogen. *Clin Sci* 1994;86:91-102.

Quevedo MR, Price GM, Halliday D, Pacy PJ, Millward DJ. Nitrogen homeostasis in man: Diurnal changes in nitrogen excretion, leucine oxidation and whole body leucine kinetics during a reduction from a high to a moderate protein intake. *Clin Sci* 1994;86:185-193.

Reeds PJ, Hutchens TW. Protein requirements: From nitrogen balance to functional impact. *J Nutr* 1994;124 Suppl.1754S-1764S.

**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.**

**Manufactured by
Douglas Laboratories
600 Boyce Road • Pittsburgh, PA 15205
800-245-4440**