# Calcium Lactate is Made From Calcium Lactate and Magnesium Citrate

Calcium and magnesium are minerals of critical importance to human nutrition and should be combined in a five-to-one ratio of calcium to magnesium. Bone mineralization is one of their primary nutritional functions. Calcium comprises about 98 percent of the mineral component of bone and tooth structure.

Calcium is also essential for other various body functions, including blood coagulation, muscle contraction, nerve conduction, maintenance and function of cell membranes and membrane permeability, and the proper functioning of many enzymes. The magnesium in this product aids in the uptake of calcium lactate by the body. However, on its own, magnesium is a critical dietary substance; it is an essential element for over 300 enzymes in the body, and among its many roles, it is a cofactor for ATP metabolism in the body.†

## How Calcium Lactate Keeps You Healthy

## Calcium lactate is a highly-bioavailable form of the important mineral

Calcium lactate is a very useful form of calcium. Unlike calcium carbonate which goes through approximately twelve chemical reactions to become calcium bicarbonate, calcium lactate changes to calcium bicarbonate (the type used by the body) in one chemical step. Calcium lactate is a very soluble calcium salt with high bioavailability, thus making it an excellent calcium source. Unlike other forms of calcium that are largely insoluble in water and need acid conditions to be absorbed, calcium lactate is highly soluble in water (a neutral pH) and does not depend on acid conditions.†

## Calcium and magnesium play a role in phagocytosis in which various types of white blood cells engulf and devour microscopic invaders

Studies show that calcium is necessary for the proper functioning of various white blood cells. Natural killer cells, lymphocytes, leukocytes, monocytes, and neutrophils are all at least partially dependent on extra-cellular calcium and magnesium.†



## Introduced in: 1947

#### Content:

90 Tablets - 1865 330 Tablets - 1885 800 Tablets - 1900

#### **Supplement Facts:**

Serving Size: 6 tablets Servings per Container: 15, 55, or 133

		%DV
Calories	5	
Total Carbohydrate	1 g	<1%*
Dietary Fiber	1 g	4%*
Calcium	250 mg	25%
Magnesium	50 mg	10%

\*Percent Daily Values (DV) are based on a 2.000 calorie diet.



## Calcium Lactate

## What Makes Calcium Lactate Unique

## **Unique Product Attributes**

### This is a vegetarian product

## Our Calcium Lactate product is not derived from a dairy source

· We obtain our calcium lactate from pure-vegetable sources of calcium

### Calcium lactate is very soluble and high in bioavailability

Making it an excellent calcium source

#### Contains the proper balance of calcium and magnesium (5:1 ratio)

Supports utilization of these synergistic minerals†

## Unique Processing

Degreed microbiologists and chemists in our on-site laboratories constantly conduct bacterial and analytical tests on raw materials, product batches, and finished products

· Ensures consistent quality and safety

#### Vitamin and mineral analyses validate product content and specifications

· Assures high-quality essential nutrients are delivered

## Whole Food Philosophy

Dr. Lee challenged common scientific beliefs by choosing a holistic approach of providing nutrients through whole foods. His goal was to provide nutrients as they are found in nature-in a whole food state where he believed their natural potency and efficacy would be realized. Dr. Lee believed that when nutrients remain intact and are not split from their natural associated synergists-known and unknown-bioactivity is markedly enhanced over synthetic nutrients. Following this philosophy, even a small amount of a whole food concentrate will offer enhanced nutritional support, compared to a synthetic or fractionated vitamin. Therefore, one should examine the source of nutrients rather than looking at the quantities of individual nutrients on product labels.

Ingredients: Calcium lactate, magnesium citrate, calcium stearate, and arabic gum. Suggested Use: Six tablets per day, or as directed. Sold to health care professionals.

Studies on nutrients generally use large doses and these studies, some of which are cited below, are the basis for much of the information we provide you in this publication about whole food ingredients. See the supplement facts for Calcium Lactate

Aoyagi, et al. 1992. Role of Mg in Activation of NADPH Oxidase of Human Neutrophils: Evidence That MG Acts Through G-Protein. Biochem Biophys Res Comm 186(1): 391-397.

Argow S., et al. 1979. Cation Requirement of Natural, In-Vitro Generated and Antibody Dependent Killing Exerted by Human Lymphocytes. Immunobiology 156(1-2): 25-34.

BarDayan Y., Shoenfeld Y. 1997. Magnesium Fortification of Water. Annales de Medecine Interne 148(6): 440-444.

Bovec-Oudenhoven I. F., et al. Dietary Calcium Inhibits the Intestinal Colonization and Translocation of Salmonella in Rats. Gastroenterology 113(2):

550-557.
Burkey, et al. 1991. Intracellular Calcium Changes Associated With In Vitro Lymphokine-Activated Killer and Natural Killer Cell Cytotoxicity. Arch Otolaryngology--Head and Neck Surgery 117(6): 1281-1287.
Frakes M. A., Richardson L.E. 1997. Magnesium Sulfate Therapy in Certain Emergency Conditions. Am J Emergency Med 15(2): 182-187.
Green, et al. 1983. The OZ Generating Oxidoceductase of Human Neutrophils: Evidence of an Obligatory Requirement for Calcium and Magnium for Expression of Catalytic Activity. Biochem Biophys Res Comm 110(3): 973-987.

Grewal A.S., Babiuk L.A. 1980. Complement-dependent, Polymorphonuclear Neutrophil-medicated Cytotoxicity of Herpesvirus-infected Cells: Possible Mechanism(s) of Cytotoxicity. Immunology 40(2): 151-161.

Harlan J., et al. 1977. Magnesim-Dependent Adenosine Triphosphatase as a Marker Enzyme for the Plasma Membrane of Human Polymorphonuclear Leukocytes. *Infect Immun* 13(2): 436-443. Leibovitz B. 1991. *Nutrition Update* 5(2).

Merck Manual, 1992. 16th ed. 2581.

Merck Manual. 1992. 10th ed. 2581.

Murray M., Pizzorno). 1998. Encyclopedia of Natural Medicine. Rocklin, CA: Prima Publishing.

PURAC Incorporated Product Data sheet. 1987. Arlington Heights, IL: PURAC Inc.

Rijkers G.T., et al. 1993. Changes in Free Cytoplasmic Magnesim Following Activation of Human Lymphocytes. Biochem J 289(Pt 2): 373-377.

Suzuki H., et al. 1985. Enhancement by Ca or Mg of Catalytic Activity of the Superoxide-producting NADPH Oxidase in Membrane tools of Human Neutrophilis and Monocytes. J Biol Chem 260(6): 3635-3639.

Toka F.N., et al. 1996. The Cytosolic Free Ca in Ectromelia (Mousepox) Virus Stimulated Cytotoxic T Lymphocytes. Viral Immunol 9(3): 159-167. Torres M., Hunter K.A. 1990. Magnesium is Necessary for Adherence of Human Polymorphonuclear Neutrophils to Laminin. Pediatr Res 27(4 Part

Tsugawa, et al. 1995. Bioavailability of Calcium from Calcium Carbonate, DL-Calcium Lactate, L-Calcium Lactate and Powdered Oyster Shell Calcium

in Vitamin D-Deficient or Replete Rats. Biol Pharm Bull 18(5): 677-682.
Tsugawa, et al. 1993. J Bone Mineral Metab 11(2 Suppl 3): S23-S32.
van Mossevelde B. 1997. Food Product Design. Health Information System: Nutriceutica. Dallas, TX: Kian Inc: 69-70.