



# LIPOCAL

## HIGHLY BIOAVAILABLE SOURCE OF CALCIUM



IMPROVED DISPERSIBILITY

VERY HIGH CALCIUM CONCENTRATION

MORE BIOAVAILABLE THAN OTHER CALCIUM SOURCES

NON-ANIMAL SOURCE OF CALCIUM

### DESCRIPTION

**LIPOCAL** is a water dispersible micronized source of calcium coated with lecithin. This unique delivery system increases calcium dispersibility and absorption, thus providing an easy enrichment of various types of foods, beverages and dietary supplements with this essential nutrient.

### COMPOSITION

Tricalcium Phosphate, Identity preserved soy lecithin.

### A NUTRITIONAL VIEW

There is a growing awareness of the importance of maintaining a high calcium intake throughout life, not just for bone health but also for the health of other body systems.

Calcium intake, particularly that during childhood, is a major determinant of bone mass in adults, and it also influences the rate of bone associated with aging. Osteoporosis, a disease affecting many millions of people around the world, is characterized by bone fragility that over time leads to bone fracture.

In countries with a high incidence of osteoporotic fractures, a low calcium intake is associated with increased risk of fracture. Low dietary intake of calcium also is associated with higher risks of colon cancer and hypertension and may affect normal growth in children.

Although dairy products account for about 70% of dietary calcium, total calcium intake remains inadequate. This realization has led to the calcium fortification of an expanding number of foods. Particularly pressing is the need to ensure adequate calcium intakes for vegetarians and for those with milk aversions.

**LIPOCAL** comprises a highly bioavailable non-animal source of calcium, suitable for vegetarians, that can be easily incorporated in a wide range of food applications.

### APPLICATIONS

Supplementation in a wide range of products such as milk and dairy products, soy products, bakery products, beverages, food supplements, etc.

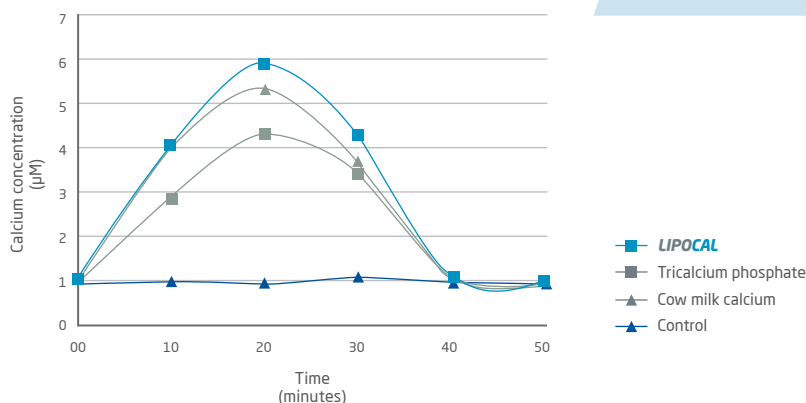
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### LIPOCAL BIOAVAILABILITY

#### 1. CALCIUM ABSORPTION PROFILE

A study of dietary calcium absorption in guinea pigs was performed at the University of Barcelona, in order to compare the bioavailability of calcium from three different sources: Tricalcium Phosphate (TCP), **LIPOCAL** and dairy calcium.

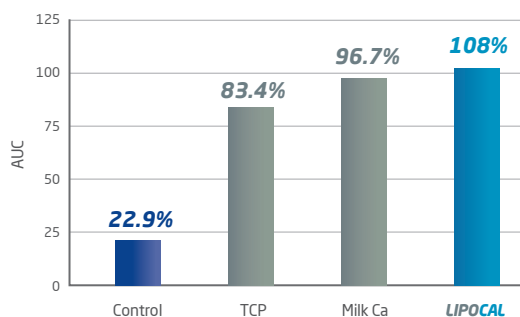
Four groups of five male Hartley guinea pigs weighing 400-450 g were orally administered a dose of 3.43 mg calcium/kg body weight, corresponding to 2 dairy yogurts of 100 grams for a person of 70 kg. Blood samples were extracted before and after 10, 20, 30, 40 and 50 minutes of administration and the plasma calcium concentration was measured through Inductively Coupled Plasma Atomic Emission Spectrometry. The absorption profile of calcium during 50 minutes was obtained and the overall uptake per time was calculated.



**A FASTER INCREASE IN CALCIUM BLOOD CONCENTRATION IN ANIMALS FED WITH LIPOCAL WAS SHOWN**

#### 2. PLASMA CALCIUM CONCENTRATION CURVE

The corresponding area under the curve (AUC) for plasma calcium concentration for each formulation was estimated measuring the amount of calcium absorbed during the experimental period.



**LIPOCAL IS A HIGHLY BIOAVAILABLE CALCIUM SOURCE**  
Results showed that **LIPOCAL** is 41% more bioavailable than TCP and 15% than Milk Calcium.