

## News Release

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### **New study suggests Carnipure™ supplementation improves bone mineral density**

Basel, Switzerland, July 31<sup>st</sup>, 2008 – A new study released by the University of Connecticut, USA, suggests, that Carnipure™ tartrate supplementation can slow down bone loss and improve bone microstructural properties by decreasing bone turnover in aged ovariectomized rats. The study was supported by Lonza, utilizing its Carnipure™ tartrate which is a very stable salt form of L-Carnitine. The findings were published in the June 2008 issue of *Phytomedicine*.

L-Carnitine plays a central role in energy metabolism and is especially important for tissues with high energy requirements, such as the skeletal muscles or the heart. It has been demonstrated that L-Carnitine levels decrease with age and its deficiency compromises the utilization of energy, as well as physical performance. A few studies have also led to the conclusion that L-Carnitine can have a beneficial effect on bone.

Ovariectomized rats serve as a model to study postmenopausal bone metabolism. A major public health concern in postmenopausal bone loss is caused by an increased rate of bone turnover. When the rate of bone resorption exceeds that of bone formation, fracture risk is increased.

In this study, ovariectomized female rats were assigned to two different groups, one received a diet without L-Carnitine supplementation and the other received the same diet plus Carnipure™ tartrate supplementation during a 5 week period. Different dietary treatments did not significantly affect food intake or body weight, although there was a tendency of lower body weight in the Carnipure™ tartrate supplemented group. Mean tibial bone mineral density of the Carnipure™ tartrate supplemented rats was significantly higher, 6.3% compared to the control group. This is considered clinically relevant when the results are compared with certain approved medications for osteoporosis. Carnipure™ tartrate supplementation was further found to decrease gene expressions of TRAP, a measure of bone resorption, by 72.8% while also decreasing two markers of bone formation by over 60%, compared with the control group. "These findings indicate that Carnipure™ tartrate supplementation can suppress the rate of bone turnover, which also adds to the growing body of evidence supporting the potential use of Carnipure™ tartrate in post-menopausal women", says Mike DeGennaro, Global Head Marketing & Sales Nutrition at Lonza.

Lonza is the only manufacturer of the Carnipure™ brand of L-Carnitine products including Carnipure™ tartrate (U.S. Patent 5073376, Japan Patent JP 2546068 and other international patents). Carnipure™ tartrate consists of 68% pure L-Carnitine and 32% L-tartaric acid and is self affirmed as GRAS (Generally Recognized as Safe).

Carnipure™ products are crystalline, white, water-soluble and heat stable which makes them ideal for use in various food and drink applications. In addition, Carnipure™ tartrate is non-hygroscopic, odorless, has a pleasant citrus taste and excellent flowability. Carnipure™ products are kosher certified. Further details are available at [www.carnipure.com](http://www.carnipure.com).

### **About Lonza**

Lonza is one of the world's leading suppliers to the pharmaceutical, healthcare and life science industries. Its products and services span its customers' needs from research to final product manufacture. Lonza is the global leader in the production and support of active pharmaceutical ingredients both chemically as well as biotechnologically. Biopharmaceuticals are one of the key growth drivers of the pharmaceutical and biotechnology industries. Lonza has strong capabilities in large and small molecules, peptides, amino acids and niche bioproducts which play an important role in the development of novel medicines and healthcare products. Lonza is a leader in cell-based research, endotoxin detection and cell therapy manufacturing. Lonza is also a leading provider of value chemical and biotech ingredients to the nutrition, hygiene, preservation, agro and personal care markets.

Lonza is headquartered in Basel, Switzerland and is listed on the SWX Swiss Exchange. In 2007, Lonza had sales of CHF 2.87 billion. Further information can be found at [www.lonza.com](http://www.lonza.com).

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