



## CLA (Conjugated Linoleic Acid)

Stock# 3010-1 (75 capsules)

Conjugated linoleic acid (CLA) is a naturally occurring polyunsaturated fatty acid present in many foods, particularly beef and dairy products, and can be synthesized from linoleic acid. CLA has attracted much interest since the discovery that it has anticarcinogenic and body fat-lowering effects. CLA may also reduce cholesterol.<sup>1-6</sup>

CLA is unique because, in experimental studies, most naturally occurring substances that have anticarcinogenic (reduces the frequency or rate of spontaneous or induced tumors) activity are of plant origin, whereas CLA is present in food from animal sources. In fact, CLA has been acknowledged by the National Academy of Science as being "the only fatty acid shown unequivocally to inhibit carcinogenesis (cancer development) in experimental animals." In numerous animal studies, CLA has demonstrated anticancer and antimetastatic (prevents the spread of disease to another part of the body) activity against breast, colorectal, lung, prostate, skin and stomach cancers. In vitro studies have shown that CLA kills human breast, colorectal and skin cancer cells. Recent research also found CLA to inhibit cell proliferation (reproduction) and stimulate apoptosis (cell death) of human bladder cancer cells. Furthermore, a 3-year study of pre- and postmenopausal women with breast cancer found that dietary and serum CLA levels in postmenopausal women were significantly lower than in healthy matched controls.<sup>3,5,7-13</sup>

In addition, consistent and convincing effects of CLA on body composition have been documented in several animal studies—CLA has been shown to reduce body fat and to increase lean body mass in pigs, mice, rats and chicks. The body fat-lowering effect of CLA in experimental animals led researchers to theorize that CLA could be used in body weight management in humans. There have been several clinical trials showing significant decreases in body fat (from 2 to 20%) in both in overweight and normal weight volunteers.<sup>1,2,4</sup>

A 12-week, randomized, double-blind study of 60 overweight or obese male and female volunteers demonstrated a significantly higher reduction in body fat mass in those taking CLA (at doses of 3.4 and 6.8 grams/day) compared to those receiving placebo. Plus, the increased lean body mass seen within all CLA groups was not seen in the placebo group.<sup>2,11</sup>

A 4-week, double-blind, randomized, controlled study was conducted on 25 abdominally obese men (ages 39 to 64) with signs of metabolic syndrome—metabolic syndrome affects almost 25% of Americans and greatly raises the risk of diabetes, heart disease and stroke. Those taking CLA (4.2 grams/day) demonstrated a significant decrease in sagittal abdominal diameter (SAD) compared with placebo.<sup>14</sup>

In a 12-week double-blind study of 53 healthy men and women (ages 23-63 years) randomly assigned to take CLA (4.2 grams/day) or the same amount of olive oil as a control, the proportion of body fat decreases in the CLA-treated group were significantly different from the control group.<sup>15</sup>

An 8-week double-blind study was performed with 22 volunteers taking either 0.7 grams of CLA for 4 weeks and then increasing to 1.4 grams of CLA for the next 4 weeks, or taking a placebo as the control group. The sum of the thickness of ten skinfolds, percentage body fat calculated from it and fat mass was significantly reduced in the CLA group during the second 4-week period.<sup>16</sup>

Another 12-week, randomized, double-blind, placebo-controlled study was conducted using 20 healthy volunteers of normal body weight and body mass index who did standardized physical exercise in a gym for 90 minutes, 3 times weekly. Participants took either CLA (1.8 grams/day) or placebo. Body fat, measured using near infrared light, was significantly reduced in the CLA group during the study, but not in the placebo group. Researchers concluded that CLA also appears to reduce body fat in healthy exercising humans of normal body weight.<sup>17</sup>

CLA (1.8 or 3.6 grams/day) increased feelings of fullness and satiety and decreased feelings of hunger compared to placebo in a 13-week study of overweight subjects on body-weight maintenance following weight loss. In addition, the regain of fat-free mass was increased by CLA compared to placebo, and as a result, resting metabolic rate was increased—resting metabolic rate is the rate at which the body burns calories while at rest (i.e. while sitting, sleeping, etc.).<sup>18,19</sup>

Finally, one study investigated the effect of CLA and an herbal anticellulite pill on visible cellulite in the thighs.

Sixty female volunteers took an herbal anticellulite pill or a combination of an herbal anticellulite pill plus CLA for 60 days. Researchers found that the combination treatment had a beneficial effect in as many as 75% of the women—the appearance of the skin improved significantly and thigh circumference was reduced by an average of nearly an inch (0.88 inch).<sup>20</sup>

The impact of CLA on body composition has been linked to reduced fat deposition and increased lipolysis (breakdown of fat) in adipocytes (fat cells). In other words, CLA appears to decrease the ability of fat cells to take up fats from the bloodstream, inhibit the formation of new fat cells, and help cells burn fat at a higher rate, thus leading to a reduction in fat. CLA also appears to increase lean muscle mass, particularly in individuals who are exercising regularly.<sup>1-3,11,21,22</sup>

Furthermore, CLA may have potential as a therapeutic nutrient with respect to dyslipidemia (excess lipids or fats in the blood). Supplementation with CLA has been shown to improve serum lipid profiles in experimental animals. In humans, 2 studies demonstrated reductions in LDL-cholesterol, while a third study found that CLA significantly reduced both fasting plasma triglyceride and VLDL-cholesterol concentrations, thus confirming that some of the cardio-protective effects of CLA demonstrated in animal studies are relevant to humans. It is important to note that although high serum LDL-cholesterol and low serum HDL-cholesterol concentrations are well-established risk factors for coronary heart disease (CHD), in recent years, elevated triglyceride concentrations have also been established as an independent risk factor for CHD.<sup>2,11,15,16,23-26</sup>

CLA is generally considered safe and nontoxic at supplemental levels. CLA may cause gastrointestinal upset in isolated cases; however, taking it with a meal should help avoid the possibility of mild nausea. Based on preliminary animal and human data, one review suggested that those chronically supplementing CLA may want to monitor insulin, glucose levels, and insulin-mediated glucose disposal, as well as serum lipids to include HDL and Lp(a) fractions.<sup>1,3,6,7,11</sup>

Each softgel capsule of CLA provides 750mg of conjugated linoleic acid, in a base of safflower oil, which contains approximately 75% linoleic acid.<sup>3</sup>

#### References:

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