

Lipotrophin-AM™

Applied Nutraceuticals has developed a powerful new fat burning compound through extensive research and application of the most modern scientific principles. Our research team invested the last year and a half in product development and testing, filtering through the countless ingredients available on the market in order to find the most effective product possible. The team finally concluded that the active ingredients in this formula, when specially titrated and synergistically proportioned to optimized dosage levels, creates the most effective fat metabolizer available today without a prescription. The result is Lipotrophin AM™.

Lipotrophin-AM contains methylxanthine anhydrous caffeine (MXAC), a xanthine alkaloid compound that acts as a metabolic stimulant that has been used by humans since the Stone Age (1,2,3). Additionally, it incorporates Green Tea, a compound used in China for thousands of years to promote health in the mind and body. Green Tea has strong anti-oxidant properties, and its main ingredient, EGCG, has been shown to have significant metabolic benefits (5). Lipotrophin AM also contains Bacopa Monnieri, an Ayurvedic herb that boosts thyroid function and conversion, which is a potent fat-burning stimulus and also been shown to reduce stress levels (22). Mucuna Pruriens, the final ingredient in Lipotrophin-AM, contains large amounts of L-Dopa, a potent compound that allows for greater growth hormone release (13). The combination of the ingredients in Lipotrophin-AM are specially titrated into a powerful synergistic compound, designed to turn your body into a fat-burning machine!

Energy Metabolism, Caffeine, and Green Tea

Methylxanthine anhydrous caffeine (MXAC) is a central nervous system and metabolic stimulant that temporarily restores alertness and reduces physical fatigue. It also improves general body coordination and exerts many beneficial effects on the body, such as fat loss and energy metabolism. Methylxanthine anhydrous caffeine has been shown to increase lipolysis (fat burning), by liberating glycerol and free fatty acids from triglycerides (stored fat). This is important because when free fatty acids and glycerol enter the blood stream they can be readily disposed of as energy. MXAC accomplishes lipolysis through a multifaceted system, starting with an increase in norepinephrine (NE), a neurotransmitter responsible for alertness and also for fat loss. Once NE is activated, it allows cAMP (cyclic AMP, an energy molecule necessary for fat liberation) to build up in cells. NE begins this process of cAMP build-up by combining with beta receptors on a target cell to stimulate cAMP-phosphodiesterase (PDE), an enzyme that allows cAMP levels to increase in cells. Increased levels of cAMP within the cell ultimately result in greater amounts of fatty acids being liberated from triglycerides through the following mechanism: Increased cAMP levels cause the protein kinase enzyme PKA to activate production Hormone-Sensitive Lipase (HSL), a hormone responsible for fat loss. HSL then triggers the release of fatty acids from triglycerides (fat tissue). These resulting fatty acid chains are broken down within the fat cell, which are subsequently broken down even further into acetyl-CoA. Acetyl-CoA is an important energy substrate that is in a form that can be readily utilized during the Krebs Cycle, which is active during aerobic exercise. This is an primary mechanism of how fat is disbursed as fuel for the body, but is just one of the many ways that Lipotrophin-AM facilitates fat metabolization (1,2,3). Green Tea is a versatile herb used for many centuries for a variety of maladies. Recent studies have determined Green Tea to be a strong fat burner that works through several different complementary mechanisms. It is composed mainly of catechins, pheophytins, chlorophylls, carotenoids, theanine, and a small amount of caffeine (1,2,4,5). EGCG, a catechin found in high amounts in Lipotrophin, is the most relevant compound, because it exerts a variety of important metabolic, nutrient partitioning, and appetite-controlling effects that contribute to significant weight loss. Green tea is a potent appetite suppressant, as the EGCG triggers the brain to secrete higher amounts of cholecystokinin (CCK), a peptide hormone that is vital in control of the appetite and the digestion of fat and protein (3,7). Green Tea also seems to have a nutrient-repartitioning quality, which means it has the ability to allow for the metabolism and utilization of macronutrients (carbohydrates and bound triglycerides as fuel), while disallowing others (like dietary fat) to be digested and stored. This nutrient-repartitioning quality is extremely important during weight and body fat loss, as EGCG allows the body to preferentially utilize fat as fuel over carbohydrates. Clinical studies on human subjects have confirmed this, showing that increases of preferential fatty acid oxidation over glucose have been noted in the majority of subjects while taking Green Tea. Another important piece of this puzzle has to do with the fact that the EGCG in Green Tea has been shown to inhibit the production of catechol-O-methyl-transferase (COMT). COMT is important to fat loss, because it is the enzyme that breaks down norepinephrine; therefore limiting the production of COMT allows norepinephrine to exert much stronger effects on the fat-burning cascade (4,6,7).

Mucuna Pruriens and Bacopa Monnieri

Another important mechanism of action in the Lipotrophin-AM fat loss arsenal is the release of L-Dopa-induced growth hormone (GH) and L-Dopa-related control of carbohydrate cravings and blood sugar (8,10,11,12). The mucuna pruriens contained in Lipotrophin-AM is of the highest quality, and is standardized to 25% L-Dopa. There is plentiful documentation of L-Dopa's potent neurotransmitter-boosting effects, including its conversion to dopamine and its blood sugar controlling effects, both of which are very noteworthy for weight loss. Low neurotransmitter levels (mainly dopamine and serotonin) can result in cravings for sugars and sweets and depression, to which to most common response is "comfort eating". Obviously, uncontrolled cravings can wreck any diet or weight loss plan. Mucuna helps stem this problem due to its properties that attenuate blood sugar levels, which is important because high blood sugar triggers higher insulin secretion and which results in high insulin levels. The inclusion of mucuna pruriens allows for a greater control of cravings and glucose utilization, benefiting the user by allowing for greater weight loss.

While mucuna limits blood sugar and controls cravings, it positively effects GH levels as well. As mentioned earlier, Lipotrophin-AM contains large amounts of L-Dopa, and L-Dopa is the only form of Dopamine that can cross the blood/brain barrier. Once L-Dopa is converted to Dopamine in the brain, it allows for a greater stimulation of GHRH (growth hormone releasing hormone), which directly stimulates increased growth hormone production. Acting directly, GH mobilizes fats from fat depots and decreases the rate of glucose intake and metabolism, and higher dopamine levels allow for control of cravings. Growth Hormone mobilizes fats through the regulation of HSL (Hormone Sensitive Lipase), which we have discussed earlier (8,13,14,15,16). This is extremely important part of the fat loss equation, as the more HSL released to liberate fatty acids that can be burned as fuel, the more significant your fat loss will be.

Bacopa Monnieri is the final ingredient in Lipotrophin. Studies have shown that Bacopa can increase T4 (thyroxine, a thyroid hormone) synthesis by up to 41% in mice, while allowing the uninterrupted conversion of T4 to T3. This is noteworthy, because thyroid hormone is metabolically active, and is an important component of fat loss. Conversion of T4 to T3 is an important aspect of this process, and is affected by increased levels of GH, which occurs during the usage of Lipotrophin-PM. T4 is synthesized from free tyrosine, and combined with iodine, and upon stimulation by TSH (Thyroid Stimulating Hormone), T3 and T4 are formed ((18,25). Thyroid hormone produced is about 90% T4 and 10% T3, and T3 is considered the biologically active component of thyroid, as T4 must be converted down to T3 for it to be active in target tissues (12). The production of thyroxine is regulated by TSH, and TSH is suppressed when T4 levels are high. GH decreases T4 levels due to heightened conversion to T3, and when T4 levels become too low, thyroid function becomes altered. The mechanism of action of Bacopa is crucial to this process, as it stimulates the continued synthesis of T4, providing a constant and readily available source of convertible material that will ultimately become T3 (25). This is extremely important to fat loss, because T3 is roughly ten times more biologically active than T4, and T3 increases basal metabolic rate and body heat production, resulting in greater fat loss.

In summary, our exhaustive research into fat metabolism has produced the creation of an effective, powerful new fat burning formulation that outperforms the big brands, providing you with a wide range of benefits from reducing physical fatigue and restoring mental alertness to dramatic increases in fat metabolism, even while at rest, allowing your body to use fat as fuel.

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