Absolute amounts of each functional compound will be posted upon patent finalization

These statements have not been evaluated by the food and drug administration (FDA) or any other regulatory body. These products are not intended to diagnose, treat, cure or prevent any disease.

ENERGY BLEND (15g)

* *Maltodextrin:*

Maltodextrin is a complex carbohydrate, specifically used for energy. During athletic activity the body depends on glycogen stores as its primary source of energy. Body Fat can be another source; however, fat is slower and less efficient whereby affecting performance. For this reason, it should not be your primary source of fuel. With a limited supply of glycogen-derived energy, and fat not a realistic option, what can be done to satisfy our energy needs?

Fortunately there is another alternative for energy – blood sugar. When a complex carb, such as maltodextrin is absorbed (rapidly) in the small intestine, it creates an elevation in blood sugar. This elevation can then decrease the reduction of your glycogen stores. Because it is slowly utilized, Maltodextrin is relatively unique in its effectiveness to raise blood sugar without causing a hypoglycemic crash, unlike the D-Ribose below.

* *D-Ribose:*

D-Ribose is used to improve athletic performance and exercise by boosting muscle energy. Studies have shown that D-ribose prevents muscle fatigue and provides extra energy to the heart during exercise in people. By supplementing with D-Ribose you can also replenish energy quicker than diet alone, and since it supports protein synthesis, it helps muscle repair more rapidly. Additionally, D-Ribose, much like the maltodextrin, creates an immediate elevation in blood sugar; however, D-Ribose preferentially raises blood sugar higher (than an equivalent amount of maltodextrin) and burns off faster. This would normally create a situation where we could expect a hypoglycaemic crash, however, the maltodextrin works in concert to augment blood sugar levels and provides for increased duration of support.

https://examine.com/supplements/d-ribose/

CELLULAR SUPPORT BLEND (13.5g)

* *Carnitine (ALCAR):*

L-Carnitine and the related compound Acetyl-L-Carnitine (ALCAR) are compounds that alleviate the effects of aging and disease on mitochondria (the powerhouses within cells), while increasing its potential to burn fat.

ALCAR is often also used as a brain booster, due to its ability to increase alertness and mitochondrial capacity while providing support for neurons.

ALCAR has been shown to be very effective at alleviating the side effects of aging, such as neurological decline and chronic fatigue. ALCAR supplementation is a very safe method of improving insulin sensitivity and blood vessel integrity, particularly for people with delicate or weakened cardiac health. ALCAR can also protect neurons and repair certain types of damage caused by diseases like diabetes and diabetic neuropathy.

Theoretically, ALCAR supplementation for fat burning should work well, but studies on ALCAR in isolation do not show very good results. Fat loss is typically attributed to increased activity from higher energy levels provided by ALCAR supplementation.
https://examine.com/supplements/l-carnitine/

** Hydrolyzed Collagen:*
Collagen has been proven as a nutrition solution to support strong and flexible tendons and ligaments in athletes, contributing to high performance and fast return-to-training.

** Creatine:*
Creatine is a molecule produced in the body. It stores high-energy phosphate groups in the form of phosphocreatine. Phosphocreatine releases energy to aid cellular function during stress. This effect causes strength increases after creatine supplementation, and can also benefit the brain, bones, muscles and liver. Most of the benefits of creatine are a result of this mechanism.

Creatine can be found in some foods, mostly meat, eggs, and fish. Creatine supplementation confers a variety of health benefits and has neuroprotective and cardioprotective properties. It is commonly used by athletes to increase power output and lean mass.

So what does creatine do?
Creatine can help with exercise performance by rapidly producing energy during activity. Creatine may also provide cognitive benefits.

https://examine.com/supplements/creatine/

** L-Malic Acid:*
Malic acid is an organic compound that is naturally found in fruits such as apples. It is often taken as a supplement, especially for the treatment of fibromyalgia and chronic fatigue syndrome. Malic acid is known for its ability to increase energy and tolerance to exercise. This is because it is an essential component in the Krebs cycle, which is how our bodies convert food into energy.

AMINO BLEND (11.5g)

** Beta Alanine:*
Beta-alanine is a modified version of the amino acid alanine.

Beta-alanine has been shown to enhance muscular endurance. Many people report being able to perform one or two additional reps in the gym when training in sets of 8–15 repetitions. Beta-alanine supplementation can also improve moderate- to high-intensity cardiovascular exercise performance, like rowing or sprinting.

When beta-alanine is ingested, it turns into the molecule carnosine, which acts as an acid buffer in the body. Carnosine is stored in cells and released in response to drops in pH. Increased stores of carnosine can protect against diet-induced drops in pH (which might occur from ketone production in ketosis, for example), as well as offer protection from exercise-induced lactic acid production.

Large doses of beta-alanine may cause a tingling feeling called paraesthesia. It is a harmless side effect. Once adequate steady-state levels are achieved in the body, most find that the paraesthesia no longer occurs.
https://examine.com/supplements/beta-alanine/

** L-Citrulline:*
L-Citrulline is one of the three dietary amino acids in the urea cycle, alongside
L-arginine and L-Ornithine.

L-Citrulline is used as a sports performance and cardiovascular health supplement. L-Citrulline supplementation results in reduced fatigue and improved endurance for both aerobic and anaerobic prolonged exercise. There is not enough evidence to support the claim that L-citrulline supplementation improves power output during exercise.

Supplementing L-citrulline also increases ornithine and arginine plasma content. This means L-citrulline supplementation improves the ammonia recycling process and nitric oxide metabolism. L-citrulline is also used to alleviate erectile dysfunction caused by high blood pressure.

After supplementation, L-citrulline is converted into arginine in the kidneys. Supplemental L-arginine provides a spike of L-arginine in plasma, while supplemental L-citrulline increases arginine plasma levels over a longer period of time.

L-arginine and L-ornithine are subject to reduced absorption when supplemented in doses of 10g or more, which can result in diarrhea. L-Citrulline does not have this side effect, and since it increases plasma levels of all three amino acids, it is generally preferred as a supplement over L-arginine. L-citrulline doubles ornithine plasma content.
https://examine.com/supplements/citrulline/

** Taurine:*
Taurine is an organic acid, which acts as a lipid/membrane stabilizer in the body and can aid various anti-oxidant defense systems.

Taurine exerts most of its benefits vicariously through other compounds in the body, but exerts some of its own on a cellular level. It is being heavily researched as an anti-diabetic compound due to its actions on organs of the body of most concern to diabetics (kidney, eye, nerve health) as well as controlling blood sugar while reducing some forms of insulin resistance.
https://examine.com/supplements/taurine/

** Valine:*
This amino acid aids in preventing the breakdown of muscle, because it supplies the muscles with extra glucose (responsible for the energy production during physical activity). Valine is also a precursor in the penicillin biosynthetic pathway and is known for inhibiting the transport of Tryptophan across the blood-brain barrier.

In other words, Valine is an essential amino acid important for smooth nervous system and cognitive functioning. Valine is one of the three branched-chain amino acids, along with Leucine and Isoleucine. This amino acid cannot be produced by your body and must be obtained through food or through supplements. Valine is important for everyday body functions and for maintaining muscles, as well as for the regulation of the immune system. This particular amino acid is not processed by the liver, but is taken up by muscles. You can obtain it through kidney beans, leafy vegetables, poultry and milk.

Benefits of Valine
Valine provides numerous benefits like improvement in insomnia and nervousness. Besides, it is also proved to help alleviate disorders of the muscles, and to be an effective appetite suppressant. This amino acid also greatly improves the regulation of the immune system, but potentially, the greatest benefit of Valine is experienced by athletes performing long-distance sports and bodybuilding, because this amino acid is important for the muscle tissue recovery and for muscle metabolism, while increasing exercise endurance.

Bodybuilders usually use Valine together with Isoleucine and Leucine to promote muscle growth and to supply them with energy. Besides, this amino acid helps them recover tissues damaged during physical activity. Athletes commonly know that Valine is vital for muscle metabolism and the growth of muscle tissue as it assists in maintaining the proper amount of nitrogen in the body.
https://examine.com/supplements/valine/