INTRODUCING DR. GARNETT AND THE DEVELOPMENT OF POLY-MVA

Lipoic Acid Mineral Complexes and Poly-MVA were discovered and developed by Dr. Merrill Garnett, a researcher, biochemist and head of the Garnett McKeen Laboratory in Long Island, New York. Dr. Garnett's research lies in the emerging field of Electrogenetics, developing electro-active compounds that target metabolic pathways. Dr. Garnett has received U.S. patents for his work.

For over forty years, Dr. Garnett has delved into the secrets of molecular biology and the biochemistry of cells. He realized that certain cellular functions were the failure of some cells to regenerate and replace themselves normally. He theorized that this failure of some cells to mature was a problem with the energetics (how energy is used) in the cells and part of their complicated metabolic processes.

Dr. Garnett's research expands on the theory that all normally developed cells contain a specific inward (or directed) energy flow to DNA/RNA from the Mitochondria and the cells' energy cycle. He has searched for those pathways which support proper electron or energy flow in the cell. Research shows that normal development requires a certain amount of energy. Through laboratory experiments, Dr. Garnett found that by introducing alternative or symbiotic energy pathways normal cells were supported and enhanced.

Dr. Garnett began a long and difficult search to find a natural molecular compound that would support healthy pathways for normal development. Within those cell pathways that were missing, or deficient, his targeted cellular energy could be used to stabilize proper metabolic function. More specifically, he searched for a natural organic compound that would act as a metabolic shunt to support the cells' healthy metabolism, or energy pathways.

After testing some 20,000 compounds, Dr. Garnett discovered that alpha lipoic acid could be bound to the mineral palladium and covalently bound to B-1(thiamine), created an extremely useful and safe cellular nutrient. Thus, in 1991, came about the biochemical formula known as Lipoic Acid Mineral Complexes, from which POLY-MVA was derived. Multiple tests have shown Lipoic Acid Mineral Complexes to be safe and effective. His complete journey can be found in his research and literature and as well as his personal journey detailed in his book **First Pulse**.

Dr. Garnett work continues in cooperation with other researchers to determine the effectiveness of the principal ingredients of Poly-MVA for other uses and developing other powerful compounds. For more information visit **Garnett McKeen labs**.

POLY-MVA

Poly-MVA is a uniquely formulated dietary supplement containing a proprietary blend of the mineral palladium bonded to alpha-lipoic acid, Vitamins B1, B2 and B12, formyl-methionine, N-acetyl cysteine, plus trace amounts of molybdenum, rhodium, and ruthenium. This formulation is designed to provide energy to enhance the body systems by changing the electrical potential of human cells and promoting normal metabolism within the cell. *

A member of the Lipoic Acid Mineral Complexes (LAMC), Poly-MVA may assist in boosting immune response by replenishing key nutrients and supporting cellular metabolism. What makes Poly-MVA unique is the proprietary manufacturing process by which palladium is sequestered to lipoic acid. No other company produces a product like Poly-MVA because of the preparation and bonding process through which LAMC is manufactured. The proprietary formulation of LAMC with other vitamins, minerals, and amino acids provides considerable nutritional support, helping to enable optimum functioning of essential body systems.

POLY-MVA INGREDIENTS

Alpha-Lipoic Acid (also known as "LA" or "thioctic acid") in LAMC works to help the body to produce energy by recycling the free radicals rather than just quenching them. LA has also been shown to support the liver in removing harmful substances from the body. Studies indicate that LA assists in protecting cells and supporting the natural detoxification process that removes heavy metals from the bloodstream. Because of its many benefits lipoic acid has shown to be supportive in healthy blood sugar metabolism as shown in many published studies.

As a powerful antioxidant, LA helps to neutralize the free radicals that influence the aging process and the breakdown of normal cellular processes. LA is both water and fat soluble, so it easily passes across the blood-brain barrier and is functional in most parts of the body.

Vitamin B-1 (thiamin) is a coenzyme that, in combination with lipoic acid, is involved in the decarboxylation of pyruvate and the oxidation of alpha keto-glutamic acid. These functions are essential to energy production, metabolism of carbohydrates and neurotransmitter function. B-1 is water soluble and is not stored in any quantities in the body.

Research indicates that B-1 activates membrane ion channels, possibly by phosphorylating them. The flow of electrolytes like sodium and chloride in or out of nerve and muscle cells through membrane ion channels plays a role in nerve impulse conduction and voluntary muscle action.

Vitamin B-2 (riboflavin) is vital to maintaining a proper metabolism and helps to shore up the immune system by reinforcing antibody reserves, the body's first line of defense. Along with iron, riboflavin is essential for producing the red blood cells that carry oxygen throughout the body. In addition, the body uses extra riboflavin to keep tissue in good repair. Along with such B vitamins as vitamin B6 and niacin (which riboflavin helps the body convert into active forms), riboflavin supports and protects the nervous system.

Vitamin B-12 (also known as cobalamin) is in its most common form cyanocobalamin, which is broken down to methyl cobalamin by the body. It is generally found only in meat and dairy products. In combination with folic acid, B-12 is involved in DNA synthesis, production of the myelin sheath that protects nerves and red blood cell production. As a methyl donor involved in homocysteine metabolism, B-12 also plays an important role in immune and nerve function.

Molybdenum is an essential trace mineral. It is crucial in regulating pH balance in the body, which in turn directly affects oxygenation of cells and tissues and influences the metabolic rate of the body.

N-Acetyl Cysteine (NAC) is an amino acid naturally occurring in the body. It is a potent antioxidant that is involved in maintenance of cholesterol and lipoprotein levels. NAC functions in combination with natural interferons in the body for immune support.

Methionine is an essential sulfur based amino acid, an important component of cartilage building blocks such as proteoglycans and glycosaminoglycans. It is incorporated into tissue proteins and enzymes and is a component of active peptides, including methionine enkephalin and various endorphins. One of the main roles of methionine is as a methyl donor, contributing to numerous physiological pathways in the body, including formation of myelin components. In one such pathway, methionine converts to s- adenosylmethionine. In studies, L-methionine has demonstrated the ability to promote healthy cellular metabolism, enzyme activity and glutathione concentration. In the body, it converts to L-cysteine and therefore is potentially beneficial in liver detoxification and in neutralizing toxins.* It has been shown to support healthy copper and lead serum levels.* L-methionine is considered important for liver fat metabolism, healthy skin and nails and energy production. Methionine, like choline and betaine, is also a lipotropic compound supporting lipid metabolism and enhancing healthy hepatic function. In combination with antioxidants, methionine may help in proper pancreas function.

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

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POLY-MVA: ONE OF A KIND PRODUCT

When lipoic acid, a powerful antioxidant with many biological functions, is connected to an electrically charged mineral substrate, and associated with B vitamins, the resulting complex solution has enhanced solubility in both water and fat. It can easily and safely travel throughout the entire body, even crossing the blood-brain barrier. While at the same time supporting energy production while protecting the tissues from oxidative stress suggests that, as a nutritional supplement, Poly-MVA is unique in its ability to support over all nutrition and cellular energy.

Poly-MVA is a novel supplement which demonstrates an enhanced redox capacity. This means it is extremely efficient at accepting and donating/transferring electrons (ENERGY). Publications and clinical observations have demonstrated its ability to provide cellular energy to target fatigue and attenuate metabolic changes of aging and nutritional demands. It has a unique mitochondrial action because healthy cells have oxygen pathways. Normally, oxygen radicals are formed when fatty acids donate electrons to oxygen. These oxygen radicals have an unpaired electron charge and are unstable. Special proteins in the mitochondria convert the oxygen radicals into water and usable energy. Poly-MVA has shown to not only protect, assist and facilitate this process while also increasing Krebs Cycle Enzymes.

These nutritional ingredients in Poly-MVA may provide support for the following:

- Assist the body in producing energy
- Support the protection of cells
- Assist in promoting healthy cell integrity and function
- Supports the natural function of mitochondrial repair and remodeling
- Improves Krebs cycle activity
- Protect DNA and mRNA from oxidative damage
- Act as a powerful antioxidant
- Support Liver function
- Support nerve and neurotransmitter function
- Help to maintain oxygenation of cells and tissues

For more in-depth information on Poly-MVA and related articles and research please contact AMARC Enterprises at 619-447-6500, or search **PolyMVA**.

LIPOIC ACID MINERAL COMPLEXES A BREAKTHROUGH IN NUTRITION AND OPTIMUM HEALTH

THE DESIGN OF LIPOIC ACID MINERAL COMPLEXES (LAMC) began with the concept of protecting and supporting genes as an approach to proper cellular metabolism by using a synthetic 'mimic' of a pathway/cellular process that already exists in normal cells. This is a major departure from the current concept. The continued findings by researchers, immunologists and doctors documenting cases for immune system support and its responses to maintain calm tissue and cellular homeostasis is an important factor in health. Current science and research are developing a more integrative approach based on taking care of and targeting cell health, especially the mitochondria. Research indicates, and case studies validate, that the lack of nutrition and cellular support along with the increase in free radical damage and oxidative stress play a key role in proper cellular operation. Fortunately, the focus is changing to emphasize an integrative nutritional approach, and a more natural health understanding of how or bodies and cellular systems work.

In 1991, Dr. Merrill Garnett developed a Lipoic Acid Mineral Complex as a metallo-vitamin. Other complexes, such as Poly-MVA, were also developed by Dr. Garnett and formulated specifically for use as nutritional supplements. The complexes achieve their effectiveness through the specific changes they contribute to energy metabolism for normal cellular function. These complexes are continuously undergoing extensive testing and other versions are being made available for further research.

LIPOIC ACID MINERAL COMPLEX FUNCTIONS

Lipoic Acid Mineral Complexes are a unique new class of polymer, or orthomolecular molecules, composed of vitamins, minerals and amino acids which have powerful properties. LAMC complexes are nucleotide reductases (enzymes that catalyze a chemical reduction protecting cellular processes like DNA, RNA). The lipoic acid molecules are irreversibly bound with the mineral palladium and covalently bound to the vitamin B1 (thiamin) through an exclusive patented process that takes full advantage of each of their unique characteristics. The metabolic approach of the cell and the change in its metabolism are directly related to the health and function of our body. LAMC complexes support and protect our cells (this has proven successful in many people. Some of the powerful properties of Lipoic Acid Mineral Complexes are:

- Synergistic with vitamins & minerals
- Intracellular electron donor
- Stronger than alpha lipoic acid

- Supports reductive cell processes
- Protective against oxidative stress
- Generates ATP & water within the cell

Lipoic Acid Mineral Complexes are extremely effective and powerful antioxidants that absorb free radicals at an impressive rate compared to single ingredients. On the ORAC scale they rated 5.65 trolox/gram, compared to alpha lipoic acid (1.4) and other well-known antioxidants (between 1.0 and 2.4). Research studies demonstrated the need for 10x more lipoic acid to get the same effect as LAMC. Sensitive Volta-metric measurements indicate that like many antioxidants, LAMC complexes not only quench free radicals and protect DNA, but they also support the electron transport chain in the mitochondria. LAMC complexes are such a powerful and unique class of antioxidant complexes that they may also contribute to healthy aging while providing protection from oxidative stress. *

The LAMC complexes can shunt/accepting energy from itself to DNA, reducing the charge to the DNA, thereby protecting it from oxidation. Electrochemistry data demonstrates that LAMC complexes are potent redox polymers, and as such can both accept and donate energy (charge transfer). Since many cellular functions require the presence of electrons, LAMC can be used as support to potentiate normal cellular function. This lipoic acid polymer protects the cell (absorbing free radicals due to the lipoic acid component) and then donates that energy to the electron transport chain complexes of the mitochondria because of the Thiamin component. This is the mechanism by which it can support the Krebs cycle activity and stabilize the electron transport chain helping to support and upregulate the metabolic needs of the cell.

Extensive human and animal use of Lipoic Acid Mineral Complexes, for over 20 years across the globe, indicates that we have only scratched the surface in determining how many ways Lipoic Acid Mineral Complexes may be beneficial. They have been shown to be very effective in quenching free radicals, providing protection from oxidative stress, working at the cellular level via the electron transport chain, supporting the mitochondria thus protecting DNA. Case reviews have shown that improved energy and overall health is often improved within a few weeks of use. Reports have all shown improved well-being, more energy, increased quality of life by clients, doctors and from outcome and QOL reviews.

Benefits of Lipoic Acid Mineral Complexes include:

- Supports normal cell growth
- Maintains metabolic function
- Supports the aging process
- Supports cellular function and energy levels

- Protects cellular DNA
- Converts free radicals into an energy source
- Has many minerals, vitamin, and antioxidant functions

Metabolic Modulation and Targeted Support

Low energy caused many times by low oxygen can trigger a series of cell changes due to low metabolism resulting in a different metabolic environment and low cell function. These differences render the normal cell weaker due to the metabolic changes. Normal metabolism and low or inefficient metabolism can benefit from the same mechanism of support and targeting.

Poly-MVA exists as a nutritional supplement that is unique to free radical biology, the mineral palladium is a transition mineral that can catalyze chemical reactions, in this case aerobic respiration, thus supporting our cells electron transport chain and its ability to make energy. This enhanced ability to both accept and donate charge has significant cellular implication. By utilizing this novel redox molecule, we have demonstrated in our studies the ability to take advantage of the metabolic changes and help support proper cellular function. In contrast, the supplemental energy provides a boost to other cells. Furthermore, the LAMC formulation is a potent free radical scavenger for many cells and tissue.

POLY-MVA FREQUENTLY ASKED QUESTIONS

1. What is Poly-MVA?

Poly-MVA is a powerful, patented dietary supplement that is the first in a remarkable new category of supplements known as Lipoic Acid Mineral Complexes. Poly-MVA is a unique, patented proprietary blend of palladium, alpha-lipoic acid, vitamins B1, B2 and B12, the amino acids formyl-methionine and acetyl cysteine, and trace amounts of molybdenum, rhodium, and ruthenium.

2. What makes Poly-MVA unique?

Poly-MVA is an extraordinary compound that chemically bonds a trace mineral, palladium, to alpha lipoic acid (a powerful antioxidant) associated with B-1, thiamine. The technique of bonding these two materials together is so unique that the U.S. government has issued a patent on the process. The binding of palladium with alpha lipoic acid dramatically increases nutrient absorption at the cellular level and throughout the body. The additional co-factors along with LAMC complex distinguish Poly-MVA from any other supplement in the world.

3. How does the mineral palladium work within the complex and for the body?

Within Poly-MVA, the proprietary lipoic acid mineral complex acts in a similar way to the cobalt found in Vitamin B-12 (cyanocobalamin). The palladium is bonded or sequestered to the lipoic acid mineral complex found in Poly-MVA. Palladium serves primarily as a transport/storage mechanism to dramatically enhance the uptake of lipoic acid, while also showing to influence the electrical potential of the cell. While the lipoic acid mineral complex contained in Poly-MVA provides a significant portion of the unique action of the supplement, other important vitamins, minerals and amino acids are co-factors that assist and enhance the function of the lipoic acid mineral complex, while also contributing to the support of the body's natural processes.

4. Why do people take Poly-MVA?

People take Poly-MVA for optimum health and maximum nutritional support. It is designed to increase energy, reduce fatigue, help to enhance overall health and well-being, and provide advanced nutritional support. * Many people have found Poly-MVA to be a helpful in improving quality of life, energy, anti-aging, feeling their best when used daily for support.

- Provides superior antioxidant and free radical protection*
- Offers immediate absorption in liquid form for faster acting*
- Supports energy production at the mitochondria and cellular level*
- Enhances and supports quality of life*
- Promotes overall health and may replenish nutrients.

Dr. Rudy Falk, M, said, "Poly-MVA has properties that make it beneficial in supporting and optimizing cellular functions, protecting DNA, and it shows promise in helping to re-energize cells by the transfer of energy, especially those under stress. "*

Dr. James Forsythe, MD, HMD, states, "After using Poly-MVA in an outcome-based review of 1700 people over 15 years, the remarkable mitochondrial support it gives them is amazing!"

5. Can people take Poly-MVA for daily support or any other reasons?

Yes, Poly-MVA is an ideal easy to use oral supplement that can be taken straight or mixed with your favorite beverage. It was intended to help support many of the body's systems, strengthen immune response, enhance energy production, and improve quality of life by providing high-quality essential nutrients in a unique form that can be easily used and assimilated by the body. *

6. How long does a bottle last? How much do people normally take?

How long a bottle lasts depends on how much you use and the bottle size. Depending on individual use, a large bottle of Poly-MVA could last as much as 192 days (over six months). If you are using Poly-MVA to help maintain optimum health and function, a large bottle can last 3 months or more, for those who are using for energy or for maximum nutritional support, an 8oz bottle may last 6 days.*

DAILY SUPPORT TO MAINTAIN OPTIMUM HEALTH:

The recommended use to maintain optimum health is 1/4 to 2 teaspoons per day depending on body weight.

FOR MAXIMUM SUPPORT:

Maximum energy production and nutritional support has researched at 2 teaspoons 4-6 times per day (8-12 teaspoons total, titrating/incrementally increasing dosage over at least a weeks' time) for the first 12 to 16 weeks. Some individuals that feel depleted may choose to stay on the higher amounts for longer periods of time and that is fine if they choose to do so. Everyone responds differently and therefore may find that the optimum benefit is maintained at the higher recommended use level for some time. Others may reduce to the maintenance amount after 8-12 weeks, use the titrating process to best determine your amount or speak with your practitioner.

7. How long does it take to get results?

Dr. Merrill Garnett, whose research led to the discovery and development of Poly-MVA, believes that most individuals will notice a difference in how they feel within the first 4-8 weeks. In some cases, we have seen dramatic responses (energy improvement, feeling better, etc.) in just a matter of days.

8. Is Poly-MVA safe?

The ingredients are safe and effective. Poly-MVA is assimilated in the body as nutrition. During the initial development of Lipoic Acid Mineral Complexes, high acute doses were tested to determine if there were any concerns; even at the highest administered dose (LD-50's-Fifty times higher than the maximum recommended dose), no negative effects were observed in those or any of the tests. Based on all the research data, the natural ingredients in the product, as well as the safe use in humans and animal along with the various studies for over 20 years, Poly-MVA is <u>extraordinarily safe</u>. Please note all of us are different, and some may react differently, just like food. If you have any concerns, please discontinue use and contact us or your practitioner.

9. Is there anything that may be inhibited or minimized in effectiveness while using Poly-MVA?

Chelating agents, mitochondrial inhibitors and certain antioxidants at high levels, well above their recommended daily allowance should be minimized and/or alternated (the recommend waiting at least four-six hours before taking Poly-MVA). Additional alpha lipoic acid should be minimized/alternated because it may compete with the lipoic acid complex in the Poly-MVA and is usually NOT necessary while using Poly-MVA.

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10. Why does it seem that this product is more costly compared to other supplements?

It is competitive with other dietary supplements in volume/size and benefit. Its unique ingredients are a combination of the mineral palladium and other precious minerals, which are some of the most expensive minerals in the world (palladium is typically more expensive than platinum and has been more than gold). Therefore, the raw materials cost is much higher than a typical supplement. In terms of the cost of the raw materials and manufacturing process vs. the selling price, Poly-MVA is like many other nutritional supplements.

11. How long has Poly-MVA been in use?

Poly-MVA has been manufactured and available in the U.S. since 1992. There are many physicians around the world recommending and using Poly-MVA in their office and clinics as part of an overall program for health and well-being. *

12. Are there any physicians using Poly-MVA?

Yes, and integrating in various ways seeing exciting patient successes and responses. This unique supplement, with the intricate and specific action of Lipoic Acid Mineral Complexes, continues to gain acceptance among professionals in many ways.

GUIDELINES FOR THE USE OF POLY-MVA

The suggestions for use contained herein are not offered or intended for use in treating, preventing or mitigating any disease. Please consult a qualified health care practitioner if you have a health concern.

If you are pregnant, nursing, or would like to give Poly-MVA to a child, please consult your practitioner.

Suggested Usages and the Number of Bottles Needed per Month:

Each 8 oz. bottle of Poly-MVA contains 48 teaspoons (236 cc). Each teaspoon is approximately 5 cc.

The guidelines below are general suggestions because everyone's body is different. Recommended usage may be due to body mass and one's ability to absorb the product. For that reason, we have found that some people have achieved their desired results by remaining on the "maximum support" for longer periods of time.

FOR DAILY NUTRITIONAL SUPPORT OR AS A LONGEVITY TONIC:

Suggested use is 1 ¹/₂ tsp. per day, may adjust for body weight.

FOR PHYSICAL SUPPORT:

Initial amount:	Day 1-3:	¹∕₂ teaspoon	(1/2 tsp. daily)
	Day 4-6:	¹∕₂ teaspoon	(1/2 tsp., 2 times)
	Day 7-10:	½ teaspoon	(1/2 tsp., 3 times)
	Day 10-90:	Larger amounts if desired, (3-4 times/day))	

Then reduce to 3 tsp. daily, (1 ¹/₂ tsp., twice daily) For the maintenance and continued support, take 1 ¹/₂ daily.

Five bottles per month are needed at 8 teaspoons /day.

Smaller weights for more support:

1 ¹/₂ tsp. per 30 pounds of body weight per day. Start the with a small amount and increase to the desired amount slowly over three to seven days.

FOR MAXIMUM EFFECTIVENESS: HOW AND WHEN TO TAKE POLY-MVA

Using Co-enzymeQ-10 or Co-Q-10 has been shown in laboratory research to work synergistically with Poly-MVA. The recommendation is 400-600 mg daily of the standard form of CoQ10, or 200-300 mg of the "Q-Gel" form, or 30-45 drops of the LiQsorb which has shown to be more absorbable than all other forms of CoQ10 (LiQsorb is available through AMARC Enterprises). We suggest taking them with food as food enhances the absorption of Co-Q10. To improve taste, Poly-MVA may be mixed with water, tea, coffee, or juice (such as cranberry, grape, prune or vegetable). You may take with food if stomach discomfort is noticed.

Take the daily amount of Poly-MVA in divided doses if possible: for example, 2 teaspoons, 4 times daily – three times before meals and once before bed. If taking 1 tsp. daily or less and unable to take in divided dose, its fine to take it all at once in the morning. If taking LiQsorb CoQ10 we recommend taking them together. Use the titrating schedule for your amounts to get started.

Taking Poly-MVA with other Antioxidants, Chelators, Fiber, and Steroids:

Antioxidants and detoxification products in their recommended daily dosages may be taken within 30 minutes after taking Poly-MVA. If high-dose antioxidants are being taken, for example 5-25 grams of Vitamin C daily, we recommend separating them by 60-120 minutes from your dose of Poly-MVA. If mega-doses of Vitamin C are being taken (25-150 grams per day) separate by 120-240 minutes and/or consult with your physician.

If using chelation supplements, we suggest leaving an interval of at least 24 hours between using them and Poly-MVA. Therefore, we recommend taking chelators and Poly-MVA on alternating days or separating by the most amount of time on that day.

Responses that may occur in rare cases:

1. A cleansing reaction also referred to as a "Herxheimer Response" ("detoxification reaction") may be caused by the introduction of nutritional support aiding the body's systems very quickly. We recommend reducing the dosage or usage amount until the situation remedies itself, usually within a few days. Titrate slowly.

Storage and Shelf Life:

It is not necessary to refrigerate Poly-MVA, but you may if you wish. Do not expose Poly-MVA to direct sunlight. Store in a cool dry place at normal room temperature. Each bottle has a 3 year best by use date.

POLY-MVA FOR PETS:

Is ideal for nutritional support, overall health and energy support.*

Suggested dosage: 1/8 -1/2 teaspoon for daily support based on body weight.

Maximum amount: 2ml per 5 pounds of body weight, twice daily. (1.25ml =1/4 teaspoon)

Example: 10lb animal would be 8.0ml per day.