

# **LIPOIC ACID MINERAL COMPLEX**

## **INTRODUCTION AND PROTOCOLS**

***Supportive and Palliative Care  
in IV Therapies for Patients with  
Chronic Disease, Cancer and  
Mitochondrial Dysfunction***

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# Poly-MVA Adjunctive Protocol

## Chronic/Lyme/Palliative/General Care

### Frequency Options:

- a. 5 days per week for 4 consecutive weeks
- b. 3 days per week for 8 consecutive weeks
- c. 2 days per week for 12 consecutive weeks
- d. Intermittently to coincide with or around other IV protocols or treatments (e.g., various types of chemo or radio therapy use before and after)

This regimen can be repeated once or twice, depending upon response and outcome. This is best monitored long term with QOL, patient wellbeing, various markers and scans.

**Case studies have shown to start the patient on oral Poly-MVA before beginning the IV protocol.** The patient will then be doing both the IV and oral Poly simultaneously. The advance oral dose is 8-12 tsp per day (2-3 tsp four times per day) on off days (days patient does not get the IV), and 1 tsp am and pm on days they do receive the IV Poly. You can mix Poly-MVA with a favorite beverage (water, tea, coffee, or juice, the best is vegetable, prune or cranberry etc).

After the IV protocol is completed, maintain the patient on the maximum oral dose for at least 2-3 months or longer as needed. Then begin gradual oral taper after of 2-4 months.

The minimum effective dose for ongoing patients, depending on body weight is at least 1-4 tsp per day.

**Intra Muscular:** IM up to 3cc using ventrogluteal injection or Posterior gluteal injection.

There are no known contraindications at this time. In fact, it appears that Poly-MVA is synergistic with various protocols (based on doctors' reports and observed clinical responses). Poly-MVA has shown to bring patients through various conventional approaches with improved outcomes.

### **IV preparation and administration:**

1. **Generally start with 100 cc normal saline.** Initially add 10-20 cc of injectable Poly-MVA. Increase each infusion by 5-10 cc of Poly-MVA until max of 40 cc or 0.4 cc per kg (based on a 70 kg patient). Continue at the max dose throughout the remainder of the protocol.
2. Run the 100 cc infusions over 30-45 minutes.
3. 10-20cc 3 times for first week with oral dosage of 10-20 cc on the off days.
4. Dosage can increased to 30/40 cc of Poly-MVA, **increase to 250 cc of saline.** Run this over 45 minutes to one hour or more.
5. 30cc 3 times for second week with oral dosage of 10cc
6. 40cc 3 times for third week with oral on days off and weekends.

**On days with no IV Poly, use oral Poly-MVA between 10-40ml of Poly per day.**

# (Lipoic Acid Mineral Complex) For Fatigue, Mitochondrial & Neuro-inflammatory Disorders

Paul S. Anderson, NMD © 2015 PS Anderson

At our clinic, Anderson Medical Specialty Associates in Seattle Washington, we have been working with LAMC in various clinical settings:

1. Oncology treatment
2. Oncology Quality of Life
3. Chronic illness treatment
4. Chronic illness Quality of life

Our investigation of the LAMC "Poly-MVA" in the areas of chronic neuro-degenerative illnesses, Chronic Fatigue/Fibromyalgia and mitochondrial illness has led to a potentially unique and novel role in the treatment of those conditions.

As part of a multi agent therapy, our experience has been that we see better outcomes when using IV Poly-MVA over standard IV ALA.

Additionally our use of oral Poly-MVA as maintenance has shown positive results for quality of life in preliminary feedback.

## Lipoic Acid Mineral Complex /Poly-MVA: Mechanism of Action

The Lipoic Acid Mineral Complex (LAMC):

Known as the proprietary formula "Poly-MVA" in North America, LAMC has shown to be helpful in cell repair, mitochondrial repair and radioprotection [1-4]. The author has found that low IV doses (5-15 mL) combined with low oral doses (5-10 mL BID) improve energy and other quality of life measures in FMS/CFS patients. Like ALA, LAMC does take time to work so most patients are advised that either therapy (like all others) may need to be continued for a number of months for a positive therapeutic effect to be noted.

## LAMC (Poly-MVA) IV

- We have used IV Poly-MVA in the setting of chronic disease and mitochondrial damage and dysfunction.
- Doses in the fatigue – mitochondrial injured – neurodegenerative population need to be lower and ramped up more slowly than in the oncology patient.
- IV doses are given in 100 to 250 mL D5W or NS
- 5 mL test dose
- Ramp up to 20-25 mL
- Give in series (as a separate bag) with other nutrients
- Dose is once to twice weekly

1. Menon, A., and Nair, C.K.K. (2011) Poly MVA – a dietary supplement containing alpha-Lipoic Acid Mineral Complex, enhances cellular DNA repair. Int. J. Low Radiation, in print. 2 . Ramachandran, L., Krishnan, C.V., Nair, C.K.K. (2010) Radioprotection by α-Lipoic Acid Mineral Complex formulation, (POLY-MVA) in mice, Cancer Biotherapy and Radiopharmaceuticals, Vol. 25, No.4, 395-399. 3 . Menon, A., Krishnan, C.V., Nair, C.K.K. (2009) Protection from gamma-radiation insult to antioxidant defense and cellular DNA by POLY-MVA, a dietary supplement containing palladium lipoic acid formulation. Int. J. Low Radiation, Vol. 6, No.3, 248-262.4 . 4. Menon, A., Krishnan, C.V., Nair, C.K.K. (2008) Antioxidant and radio protective activity of POLY-MVA against radiation induced damages, Amala Cancer Bulletin, Vol 28, 167-173

## **Poly-MVA / LAMC IV Multi Agent Therapy**

The following is the basic format for the protocol AMSA has used with the chronically ill:

First IV: IV Vitamin/Mineral formula with cofactors to support mitochondrial and glutathione function

Second IV: Glutathione

Third IV: Phosphatidylcholine

Fourth IV: Poly-MVA

Doses for Poly-MVA as above: Doses for the other agents are as given in standard training courses.

## **Poly-MVA / LAMC IV Multi-Agent Therapy**

### **Preliminary Outcomes**

- When given to patients with chronic illness the multi-agent IV therapy above has been well tolerated and shown positive symptomatic and quality of life changes.
- In two particular patients where the multi-agent therapy above had been given with ALA in place of the Poly-MVA the patients reported better results symptomatically when the Poly-MVA was returned to the protocol.

## **LAMC (Poly-MVA) Oral**

- We have used oral Poly-MVA in the setting of chronic disease and mitochondrial damage and dysfunction.
- Oral doses can be 5 to 25mL BID
- These are used as support between IV treatments
- Generally this is dosed four to five days per week

## **Summary**

- Our clinical experience in oncology patients led us to begin to try to use Poly-MVA in the chronically population. Our experience in hundreds of administrations of Poly-MVA to patients showed safety in both IV and Oral use.
- Additionally we had the background of Poly-MVA providing improved quality of life in the oncology population.
- When we added Poly-MVA to our multi-agent IV and Oral therapy for chronically ill patients we also have noticed improved anecdotal response in symptoms and Quality of Life.
- We believe as we continue to track data on patient outcomes we will see improved parameters of symptom and potentially disease mitigation.

## **LAMC (Poly-MVA) Mechanism of Action Information: (1)**

A redox molecule that facilitates energy charge transfer at the cellular level with regards to the cellular transport chain, it can therefore protect and provide energy. Mimics the electron transport chain. Differs from free radical scavengers (e.g. alpha-lipoic acid) since there is no free lipoic acid or palladium. They are irreversibly bound together resulting in a molecule that is both fat and water soluble. LAMC (Poly-MVA) is a polymer (liquid crystal) rather than a single molecule. Therefore, the polymer provides a unified redox (accept charge and donate charge) reaction.

**In summary it is an extremely effective energy transferring molecule.**

**DCA mechanism Information: See the white paper “DCA Summary” prepared by PS Anderson for the Bastyr Clinical Research Center.**

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## **Protocol as developed at Anderson Medical Specialty Associates:**

Current combination therapy in trial using both oral and IV DCA- LAMC regimens – Patient Selection:  
Patients chosen due to lack of response or failure of other therapies  
Includes failure of standard treatment plus at least one alternative therapy

## **Dietary Intervention:**

Patients are on a modified ketogenic /low carbohydrate diet and are taking Vitamin A orally at 25,000 IU Retinol PO QD

## **Dosing:**

LAMC (Poly-MVA) at 40 mL IV or PO (Adult dose) - (PO in divided doses or IV in one dose)

### **\*\* START WITH A 10mL TEST DOSE AND RAMP UP AS TOLERATED**

IV dose is mixed in 100 mL Normal Saline and administered over 20 to 40 minutes  
No other additives are mixed in the LAMC IV  
For dosing in children use Clark’s rule: **Appendix A**  
DCA dosed at levels recommended by Dr. A. Kahn (6)  
IV: 50-80 mg/kg IV in 100 mL normal saline run IV over 15 to 45 minutes.

### **\*\* ALWAYS START WITH A LOWER (50%) TEST DOSE AND RAMP UP AS TOLERATED.**

Increase the volume of saline in patients who react during the smaller faster IV protocol.  
Oral: 15-20 mg/kg PO - BID-TID

## **Intervention Schedule:**

Dose schedule is four to five days weekly if tolerates at a rotation of four to five days on and three to two days off. If detoxification symptoms such as headache, itching, non-anaphylactic skin erythema or others occur a three day per week alternating schedule of three days on protocol and four days off protocol may be attempted. As an example a Monday - Wednesday – Friday on protocol and the balance of the days off.

## **Monitoring for reactions to therapy:**

Detoxification symptoms of DCA as typically mediated by glutathione S-transferase zeta (GSTz) are generally responsive to increased thiol support with IV glutathione, oral Alpha Lipoic Acid or N-Acetyl Cysteine, but are rarer in this combined therapy as the LAMC has Alpha Lipoic Acid as a constituent. Patient reactions can include fatigue, headache, temporary cognitive effect (“brain fog”), lethargy, body aches and other symptoms associated with glutathione detoxification effect.

**If these occur consider lowering the dose of both agents, increasing the diluent of each IV to up to 500 mL per agent, spreading the IV treatments out over a longer period or all of the above. Clinical reassessment is critical in attenuating these events.**

## Preliminary Outcomes:

Use of combination therapy in non-responders:

(All failed multiple therapies including high dose IVC as well as other Nat Rx)

### Early results:

- [+]** One lymphoma patient (NH Follicular lymphoma)  
66 YO male on admission  
Stabilized and then regressed chest masses with oral protocol  
Significant increase in QOL
- [+]** One ALL-AML (MLL+) patient  
4 YO female on admission (Dx at 11 weeks of age, disease re-activated at 4YO)  
First therapy which eliminated peripheral blasts (confirmed by return of blasts during withdrawal of DCA-Poly tx) – IV protocol 5 days per week  
Used through DLI transplant and other trial chemo tx
- [+]** One GBM patient  
52 YO female on admission  
Aggressive GBM s/p resection X2 and failed chemotherapy  
Early in therapy patient shows definite CNS effect with each treatment  
Unable to assess outcome until next imaging
- [+]** Two Multiple Myeloma patients  
(1) 71 YO female on admission  
After three weeks kappa chain values decreased significantly  
IV one day and oral 4 days per week (changed to oral protocol after week three)  
(2) 53 YO female on admission  
Results are too early to call
- [+]** One CLL Patient  
72 YO Female (Positive pain reduction at 3 weeks – awaiting follow up labs)
- [-]** One end stage Met-Melanoma patient  
Update as of 12-5-13 “No apparent help from tx”

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## Appendix A:

Clark's Rule is a medical term referring to a procedure used to calculate the amount of medicine to give to a child aged 2-17. The procedure is to take the child's weight in pounds, divide by 150lbs, and multiply the fractional result by the adult dose to find the equivalent child dosage.

**Pediatric dose = [child's weight (lb) / 150 (lb)] x Adult dose**

For example: If an adult dose of medication calls for 30mg and the child weighs 30lbs. Divide the weight by 150 (30/150) to get 1/5. Multiply 1/5 times 30mg to get 6mg. (Or convert the fraction to a decimal and multiply – 0.20 in this case).

**Common IV example:**

**Adult goal dose is 40 mL Poly-MVA. Child weighs 25 pounds [25 lb / 150 lb] x 100 grams 1/6 x 40 mL [convert to a decimal] 0.167 x 40 mL = 6.7 (7) mL dose**

## References:

1. Cell death assay (U-87 glioblastoma cell line) provided by: Frank Antonawich, Ph.D. Senior Scientist and Clinical Research Administrator Garnett McKeen Laboratory, Inc.
2. Menon, A., and Nair, C.K.K. (2011) Poly MVA – a dietary supplement containing alpha-Lipoic Acid Mineral Complex, enhances cellular DNA repair. Int. J. Low Radiation, in print.
3. Ramachandran, L., Krishnan, C.V., Nair, C.K.K. (2010) Radioprotection by  $\alpha$ -Lipoic Acid Mineral Complex formulation, (POLY-MVA) in mice, Cancer Biotherapy and Radiopharmaceuticals, Vol. 25, No.4, 395-399.
4. Menon, A., Krishnan, C.V., Nair, C.K.K. (2009) Protection from gamma-radiation insult to antioxidant defense and cellular DNA by POLY-MVA, a dietary supplement containing palladium lipoic acid formulation. Int. J. Low Radiation, Vol. 6, No.3, 248-262.
5. Menon, A., Krishnan, C.V., Nair, C.K.K. (2008) Antioxidant and radioprotective activity of POLY-MVA against radiation induced damages, Amala Cancer Bulletin, Vol 28, 167-173
6. Kahn A. “DCA- Guidelines for clinical use” Scientific Presentation. Oncology Association of Naturopathic Physicians Second Annual Meeting. Phoenix, Arizona. February, 2013.

# **Lipoic Acid Mineral Complex/Poly-MVA**

## **An adjunct in radiotherapy**

### **Abstract**

Several investigations have been initiated to enhance the antitumor effects of radiation and ameliorate its adverse effects, such as lowering of blood cell counts and initiating DNA damage in normal cells. Adjunctive compounds that potentiate therapy and attenuate toxicity to normal tissue may provide immense benefit. This study evaluated the antitumor effects of Poly-MVA (2 ml/kg, p.o) with or without radiation in two transplanted solid tumor models (Dalton's lymphoma ascites and Earlich's ascites carcinoma) over a 2 week period. Whole body gamma radiation exposure (2 Gy) was done with Co<sup>60</sup> once a week for 2 weeks. Poly-MVA enhanced the anti-tumor effect of radiation, when administered prior to radiation. Furthermore, Poly-MVA administered daily for 2 weeks, immediately after 4 Gy of irradiation, protected DNA damage in the peripheral blood. It also rendered protection against radiation-induced lowering of platelet count. The unique redox property of Poly-MVA's active ingredient, alpha-lipoic acid mineral complex, appears to be responsible for its radiosensitizing and protective effects. These findings warrant further investigation for its clinical application.

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**LIPOIC ACID MINERAL COMPLEX  
COMPLIMENTARY OUTCOME-BASED  
ONCOLOGY INVESTIGATIONS**

# INVESTIGATION PARAMETERS AND MARKERS

1. Physical Exam – tumors in skin, liver, spleen lymph nodes, etc.
2. X-rays: tumors detectable in CXR, bone X-Rays, mammograms, etc.
3. CT Scanning: tumors detectable in brain, chest, abdomen, pelvis or bones
4. Ultrasounds: breasts, GB, liver, ovaries, spleen, etc.
5. MRIs: brain, neck, sinuses, joints, breasts, muscles, soft tissues, etc.
6. Pet Scans: total body scanning (limiting the use of these)
7. Lipoic Acid Mineral Complex used in these investigations is Poly-MVA

- Bladder - NMP-22, BTA
- Breast - CEA, CA 27-29, CA-15-3
- Colorectal – CEA, CA 19-9, 5HIAA (Carcinoids)
- Esophagus – CEA, CA 19-9
- Gastric – CEA, CA 19-9
- Liver – AFP, CEA, & CA 19-9
- Lung – CEA, CA 19-9
- Lymphomas - ESR, LDH, Beta – 2 Microglobulin, SPE
- Myeloma - B2MG, SPE, LDH, ESR
- Pancreas – CEA, CA 19-9
- Prostate – PSA, Free PSA
- Ovary – CA-125
- Testes – AFP, HCG

First Outcome Study: Poly-MVA only with IPT Therapy

**225 Patients 6-year Overall Survival (OS) rate of 32%**

Second Outcome Study: Poly-MVA / IPT / FIP Therapies

**500 Patients 5-year Overall Survival rate of 39%**

## Does IV Loading Dose of POLY-MVA Make A Difference?

- Overall Response Rate on oral POLY-MVA only at 30 month mark = 30/75 (40%)
- Overall Response Rate on IV + Oral POLY-MVA at 30 month mark = 45/75 (60%)
- Loading dose difference = 20% improvement at 30 months

## BEST CASES OVER 64 MONTHS

TUMOR TYPE	CASES	HISTORICAL CONTROLS *
BREAST	140	6-12 MONTHS
CRC	54	3-6 MONTHS
HEAD/NECK	26	4-8 MONTHS
HEMATOLOGICAL	37	6-8 MONTHS
LUNG (NSC)	48	3-6 MONTHS
PROSTATE	47	6-9 MONTHS

### TOTAL SURVIVORS with Integrative Therapy

64 Months 950 PATIENT FIP STUDY 690/950 = 72%

SAFETY PROFILE FOR POLY-MVA is excellent and in line with any historical or previous review of the complex.

### Standard 3 week FIP, IPT and POLY-MVA

- Monday - FIP + POLY-MVA IV
- Tuesday - IPT + L-Glutathione IV
- Wednesday -Super “C”– 60 grams + H2O2 IV
- Thursday - IPT + L-Glutathione IV
- Friday - FIP + POLY-MVA IV

Oral Poly-MVA can be given before and is key for after treatments an long term success

### FIP Blend (Forsythe Immune Protocol)

1. Normal Saline
2. B-Complex
3. Pyridoxine
4. Vitamin B-12
5. Vitamin C
6. Magnesium Chloride
7. L-Lysine
8. Zinc
9. DMSO
10. Folic Acid
11. L-Glutathione

# **SUMMARY: POLY-MVA OUTCOME-BASED INVESTIGATION**

1. These Clinical Oncology “Outcome Based” investigations over a long period are conducted on metastatic cancers of multiple origins.
2. The investigation was voluntary and not double-blinded or placebo controlled.
3. The major parameters included: CR – All Clinical disease in Remission, PR – Greater than 50% reduction in tumor mass/markers, and SD – Less than 50% reduction in tumor mass/markers.
4. A 56% at 30 Month and 38% at 60 Month overall response rate (ORR) combining CR +PR +SD.
5. The ORR in patients on Poly-MVA *only* was 40%.
6. The ORR in patients on chemotherapy + Poly-MVA was 60%.
7. These results showed improvement over historical controls.

## **CONCLUSIONS OF POLY-MVA INVESTIGATION**

Poly-MVA is a safe (both orally/IV) and extremely effective supplement for support and palliative assistance in stage IV cancer patients, either with or without concomitant chemotherapy.

The safety profile is excellent and there were no treatment related deaths or any significant adverse reactions or negative interactions with chemotherapy or hormonal treatments.

The best responding tumors were: 1) Prostate, 2) Breast, 3) Lung, 4) Head/Neck, 5) CRC and 6) Hematological. Results show an improved Overall Response Rate over historical controls.

**An IV loading dose of Poly-MVA confers a 20% improved ORR in this investigation.**

### **Homeopathic Oncology Philosophy**

In Stage IV cancers of any origin, improvement in *Quality of Life* issues is directly proportional to improvement to overall response rate. Even stable disease can be tolerated and metamorphosed into a chronic livable condition. This is true provided that this improvement is not gained at the expense of toxic chemotherapy or radiation therapy leaving the patient with many of the following adverse side effects:

- Chemo Brain Syndrome
- Painful Neuropathies
- Cardiomyopathies
- Renal Failure
- Hepatic Failure
- Severe Pancytopenias or Dermatoses
- Pulmonary Fibrosis
- Devastating Fatigue, Anorexia and Wasting Syndromes
- Death

**These studies and the various case reports continue to confirm that the “cure or kill” approach to cancer treatment is not the only solution and more research is needed.**

# ENERGY TO GET THE JOB DONE

## “Lipoic Acid Mineral Complex”

### THE NEW APPROACH IN INTEGRATIVE MEDICINE

By Frank Antonawich, Ph.D.

Years ago, scientific and medical therapeutic approaches focused on cellular metabolism. With the advent of genetics, a concentrated shift toward genomics occurred. The area of metabolism is key, and is now being revisited and showing promise and hope for our health.

One approach is the support/increase of cellular energy - **this is metabolic power**. As we age, there is a decrease and breakdown in metabolism; furthermore, numerous disease states involve metabolic dysfunction (i.e. degenerative conditions, ischemia/stroke, and cancer). The power plant of the cell is the mitochondria. It utilizes high energy chemistry to donate electrons and drive the production of ATP, our energy source and the key to proper cell function.

LIPOIC ACID MINERAL COMPLEX (LAMC) is composed of a rare mineral bound to the antioxidant lipoic acid in a trimer around thiamine (B1). LAMC complex is available in a supplement form that contains a unique combination of minerals, vitamins and amino acids. This liquid crystal polymer provides a unified redox/complete molecule that more efficiently accepts energy; this serves as potent oxidative stress cellular protector. Furthermore, it can also donate energy and serve as an alternative energy source for the cell. This electron transfer has shown to be the key to its physiological effectiveness.

LAMC was discovered in 1989 by Dr. Merrill Garnett. His inquiry and screening into organo-mineral compounds led to this discovery. The principles that led to these findings showed that certain electrical signals are at the heart of all physiological processes.

- The supplement is not merely a cocktail of ingredients; rather, it is a complex/polymer that is both fat and water soluble so it travels to all parts of the body and crosses the blood brain barrier.
- LAMC has undergone extensive pharmacology and kinetics testing both intravenously and orally with a safety record of over 20 years.
- Research with LAMC continues to show its effectiveness in many different patients and conditions.
- The LAMC complex is a liquid crystal polymer. Any redox molecule can absorb electrons/energy, but **the LAMC also donates them for mitochondrial up-regulation and increases oxygen**. The electrochemistry work demonstrates LAMC's significant redox potential versus a monomolecular one.
- An ORAC assay was conducted by Brunswick Labs, Inc. that measures the oxygen or free radical absorbance capacity of a compound, compared to Trolox per gram of vitamin E.

Vitamin A = 1.6 (2,800)	Melatonin = 2.04 (3,468)
Vitamin C = 1.12 (1,890)	Lipoic Acid = 1.4 (2,400)
Vitamin E = 1.0 (1,700)	<b>LAMC Supplement = 5.65 (9,605)</b>

While the LAMC supplement is a highly effective free radical scavenger, its ability to donate electrons to the mitochondria of the cell is critical key to its multiple benefits. Clinical and animal research supports the science regarding its benefits in cancer, stroke, ischemia and multiple degenerative diseases. Following an interruption of blood flow or breakdown too many tissues, there is deprivation of oxygen and glucose. Providing an alternative energy source can maintain the integrity of the electron transport chain within the mitochondria. The LAMC complex demonstrated its ability to shuttle electrons to oxidized DNA and protect it while also going to the mitochondria for support. This is critical since mitochondrial health is a major concern during myocardial and cerebral ischemia. By providing this alternative energy source, the energy transport chain components do not readily dissociate. In a normal cell this would obviously provide a boost, but would serve as a supplement to an abnormal, ischemic or dysfunctional cell thereby stabilizing their function so that they can perform their necessary functions in the body.

## **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 inhibit anaerobic cells without damaging healthy ones. Dr. Garnett has received multiple U.S. patents for Lipoic Acid Mineral Complexes.

For over forty years, Dr. Garnett has probed the secrets of molecular biology and the mysteries of cells. He realized that certain cellular dysfunctions were the failure of some cells to regenerate and replicate normally, instead cloning themselves in a deranged state over and over. 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 the 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/ Mitochondria and the cells' energy cycle. He has looked for those pathways which alter 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 energy pathways, dysfunctional cells were altered selectively and normal cells were supported and enhanced.

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

After testing some 20,000 compounds, Dr. Garnett discovered that the mineral palladium, when combined with alpha lipoic acid and 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. Subsequent tests have shown Lipoic Acid Mineral Complexes to be safe and effective. His complete journey can be found in his book **First Pulse**.

Presently, Dr. Garnett is working 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 on Garnett-McKeen Labs visit [www.garnettmckeen.net](http://www.garnettmckeen.net).

### **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-acetylcysteine, plus trace amounts of molybdenum, rhodium, and ruthenium. This formulation is designed to provide energy for compromised body systems by changing the electrical potential of human cells and facilitating aerobic 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 similar to 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.

\*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.

## 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 repairing the altered or damaged gene as an approach to proper cellular metabolism by using a synthetic ‘mimic’ of a pathway/cellular process that already exists in normal cells but is deficient in abnormal cells. This is a major departure from the current concept of simply “destroying” the abnormal cell, which typically also destroys normal healthy cells. The new research in molecular biology is focusing on altered or damaged genes. The continued findings by researchers and immunologists documenting the immune system and its responses to inflammation as an important factor in many diseases are additional proof that orthodox medical science should reconsider its conventional and often destructive treatments. The 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 a nutritional approach, and a more natural, less invasive treatment in this direction is already underway.

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 in energy metabolism of both normal and abnormal cells. These complexes are continuously undergoing extensive research and other versions are being made available to the medical community.

#### 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 DNA, RNA). The lipoic acid molecules are irreversibly bound with the mineral palladium and vitamin B1 (thiamin) through an exclusive patented process that takes full advantage of their unique characteristics. The metabolic treatment of the damaged cell and the change in its metabolism are directly related to the health and function of our cells. LAMC complexes support and protect our cells (this has proven successful in widespread conditions) and are also effective as an aid in prevention. These complexes not only can assist in the correction of the underlying cause but are non-destructive to normal cells. Some of the powerful properties of Lipoic Acid Mineral Complexes are:

- **Acts as a nucleotide reductase**
- **Intracellular electron donor**
- **Used in place of alpha lipoic acid**
- **Synergistic with vitamins & minerals**
- **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 and in larger amounts than single compounds. 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). Pre-clinical, cardiac antioxidant studies demonstrated the need for 10x more lipoic acid to get the same effect as LAMC. Sensitive voltametric measurements indicate that LAMC complexes not only quench free radicals and protect DNA but can then transfer them to a usable energy source\*; this is done via the electron transport chain at the mitochondria. LAMC complexes are such a powerful and unique class of antioxidants that they may also help delay cellular aging while providing protection from oxidative stress.\* There are also indications that these complexes may aid in the repair of genetic injury.

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The LAMC complexes can shunt/deliver energy from themselves to DNA, reducing the charge to the DNA, thereby protecting it from things like oxidation, carcinogens and difficult therapies. Electrochemistry data demonstrates that LAMC complexes are potent redox polymers, and as such can both accept and donate energy (charge transfer). Since many chemotherapeutics and radiotherapy require the presence of electrons, LAMC can be used as adjunctive support to potentiate other protocols and approaches. This lipoic acid polymer protects the cell and then donates that energy to the electron transport chain via complex 1 of the mitochondria, which in turn provides energy to the cell by supporting the Krebs Cycle. This can stabilize, support and regulate the metabolic needs of the cell.

Extensive human and animal use of Lipoic Acid Mineral Complexes, for over 20 years across the world, indicates that we have only scratched the surface in determining how many health situations in which 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 and protecting DNA. Case studies have shown that things like discomfort were often reduced within three days to 2 weeks of use. Reports of better well-being, more energy, increased quality of life and more have been reported by patients, doctors and in studies.

Benefits of Lipoic Acid Mineral Complexes include:

- **Discourages abnormal cell growth**
- **Improves metabolic function**
- **Slows the aging process from cellular breakdown**
- **Supports cellular function and raises energy levels**
- **Supports appetite**
- **Protects cellular DNA**
- **Converts free radicals into an energy source**
- **Has many mineral, vitamin, and antioxidant functions**

### **Metabolic Modulation and Targeted Support**

Cellular hypoxia, which varies in different types of cells, triggers a series of physiologic adaptations to an environment dominated by anaerobic metabolism. In contrast, in acute ischemic conditions such adaptations have not occurred, resulting in a different metabolic environment. These differences render the aerobic cell susceptible to metabolic manipulation, while a normal or ischemic cell can benefit from the same support.

Poly-MVA exists as a nutritional supplement that is unique to free radical biology, since palladium is a transition mineral that can catalyze aerobic respiration, thus mimicking our cells electron transport chain. This enhanced ability to both accept and donate charge has significant physiological implication. By utilizing this novel redox molecule we have demonstrated in our studies the ability to take advantage of the metabolic dysfunction and help support proper cellular function. In contrast, the supplemental energy provides a boost to other cells. Furthermore, since this LAMC formulation is a potent free radical scavenger, it attenuates reperfusion-induced cell damage.

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## **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, preferably but not necessarily one familiar with Poly-MVA, if you have any specific health concerns.**

We suggest that before you start using Poly-MVA you confer with a Poly-MVA consultant at AMARC Enterprises at 1-866-POLY-MVA (866-765-9682) for further clarification of these guidelines and potential updates to them. If you are pregnant, nursing, or would like to give Poly-MVA to a small child, please consult your healthcare provider.

### **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 not only vary in particular cases due to body mass, size and physical health, but also due to other factors, such as the individual's ability to absorb or utilize the product. For that reason, we have found that some people have achieved their desired results by remaining on the "maximum support" usage for longer periods of time than those suggested here.

Please feel free to contact a Poly-MVA consultant at 1-866-POLY-MVA (765-9682) with any questions or concerns you may have.

If you are a practitioner using Poly-MVA in your practice or with your clients and you require further assistance, please contact the Office of Practitioner Services at 1-866-362-7476.

## **FOR DAILY NUTRITIONAL SUPPORT OR AS A LONGEVITY TONIC:**

Suggested use is 1/4 to 2 tsp. per day depending on body weight.

### **ADULTS WITH EARLY STAGES OF PHYSICAL IMBALANCES:**

Initial amount:	Day 1: 1 teaspoon	(1 tsp)
	Day 2: 2 teaspoons	(1 tsp., 2 times)
	Days 3-4: 4 teaspoons	(1 tsp., 4 times)
	Days 5-30: 8 teaspoons	(2 tsp., 4 times)

Then reduce to 4 tsp. daily, (2 tsp., twice daily), until desired results are achieved.

For the maintenance of a newly balanced system and continued support, take 1-2 tsp. daily.

### **ADULT USAGE FOR MAXIMUM SUPPORT:**

Initial amount:	Day 1: 1 teaspoon	(1 tsp)
	Day 2: 2 teaspoons	(1 tsp., 2 times)
	Days 3-4: 4 teaspoons	(1 tsp., 4 times)
	Days 5-90: 8-12 teaspoons	(2 tsp., 4-6 times)

Continue at 8-12 tsp. per day for a minimum of 3 months. We then recommend speaking with a practitioner, and/or a consultant at AMARC, for further feedback so the amount may be reduced to a proper maintenance dose until the desired results are achieved. Five bottles per month are needed at 8 teaspoons per day.

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**Please note:** If you are an adult in the process of overcoming a serious health challenge and you are just starting to use Poly-MVA, we recommend you follow the suggested usages for adults with earlier stages of physical imbalance. We suggest that you **NOT start with a “Maintenance Amount.”** Greater support is usually needed at such a time because many of the body systems have often been heavily compromised.

*For any questions please contact a consultant at AMARC Enterprises at 1-866-765-9682.*

#### **Children with earlier stages of physical imbalances:**

1 tsp. per 40 pounds of body weight per day. We suggest that you start the child out with a small amount and increase to this amount slowly over three to seven days. Continue until the desired results are achieved, then decrease the usage if desired.

#### **Children who require maximum support:**

1 tsp. per 20 pounds of body weight per day. We suggest that you start the child out with a small amount and increase to this amount slowly over three to seven days. Continue at this dosage for at least three months or longer until desired results are achieved, then decrease the usage if desired.

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

The benefits of using Co-enzyme Q-10 (Co-Q-10) have been shown in the laboratory to work synergistically with Poly-MVA. The recommendation would be 400-600 mg daily of the standard form of CoQ10, or 120 mg daily 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. If stomach discomfort is experienced, take with food or milk. To improve taste, Poly-MVA may be mixed with water, tea, coffee, or juice (such as cranberry, grape, prune or vegetable). Use plastic, glass, or ceramic measuring devices and spoons, as metal may affect the taste of Poly-MVA.

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, it's fine to take it all at once if circumstances prevent dividing the dose. If taking CoQ10 we recommend taking them together.

#### **Taking Poly-MVA with 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 5-10 grams of Vitamin C daily, we recommend separating them by 4-6 hours from your dose of Poly-MVA. If mega-doses of Vitamin C are being taken (10-150 grams per day), consult with your physician.

If using intravenous chelation therapy or oral chelation supplements that are designed to remove heavy metals or arterial plaque from the body, we suggest leaving an interval of at least 24 hours between using them and Poly-MVA, as the chelators may minimize the effectiveness of Poly-MVA. Therefore, we recommend taking chelators and Poly-MVA on alternating days.

If using a fiber product such as psyllium seed husks, ground flax seeds, or bran, leave an interval of at least an hour between taking it and taking Poly-MVA or any other supplement or pharmaceutical agent, to ensure that your supplements and medicines can be properly absorbed. Fiber at high doses absorbs many things, and can also move them through the digestive tract too quickly for maximum absorption to occur.

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Moderate to heavy use of steroids may, in some cases, diminish the effectiveness of Poly-MVA. There is no way to definitively state what usage of any given steroid is too much, because of the many variables. If you are taking steroids, you should be under the supervision of a physician.

**Please Note:** Tobacco products, alcohol and excessive caffeine intake can also slow down the uptake of Poly-MVA. Alpha lipoic acid, graviola, Zeolites, hydrazine sulfate and Pau D'Arco may interfere with the absorption of Poly-MVA. If including these in a regimen it is important and beneficial to you, call our consultants at 866-765-9682 to discuss a dosage schedule that will work best.

#### **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. Conditions may include but are not limited to: rash, headache, unusual or strong body odors, frequent bowel movements, slight fatigue or nausea. A cleansing reaction may indicate that the body is readily absorbing and responding to the vital nutrients.
2. Poly-MVA at times may act as a paramagnetic contrast agent creating a halo effect in some MRI scans but only after large doses, typically over a minimum of 4 months. Poly-MVA is a complex that contains minerals which may vibrate under certain circumstances when exposed to paramagnetic radiation. This is generally rare but for additional information, or to answer any questions, please call 1-866-POLY-MVA (866-765-9682) to speak with a consultant.

#### **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 since such exposure may affect the taste. Exposure to moderate heat is not a problem. Best if used by the date on the bottle.

**POLY-MVA FOR PETS** : This is ideal for animals, especially dogs and cats. It can be used for breeding and show animals as well as for family pets and older animals to provide protection and support for optimum health, energy and vitality. It is ideal for nutritional support to boost the immune system and provide energy and nutritional support lost during chemotherapy and radiation.\*

**Suggested dosage:** 1/8 -1/2 teaspoon for daily support and protection.

**For maximum support:** 1ml per 5 pounds of body weight, twice daily. (1.25ml =1/4 teaspoon)

**Example:** 10lb animal would be 2.5cc or ½ teaspoon 2 times per day minimum.

AMARC Enterprises, Inc. offers this information for educational purposes only. **AMARC does not sell medicines or supplements that are intended to diagnose, treat, mitigate or cure any disease or condition, and therefore cannot engage in rendering medical advice, diagnosis or treatment of any kind.** The information provided herein is a service, and should be viewed as opinion only; it is not to be used for diagnosing or treating a health condition, symptoms or a disease. **No conclusions on one's condition should be drawn without medical evaluation by an appropriately licensed physician or healthcare professional.** The information given here is neither intended as, nor appropriate as, a substitute for professional care or medical consultations. The information contained herein has been obtained from sources deemed ethical and reliable, but is not guaranteed as to accuracy or completeness. It is provided strictly a resource to assist clients in making an informed decision regarding their health management. If you have, or suspect that you may have, a health problem, please consult your health care provider. The statements contained herein have not been evaluated by the FDA.

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# POLY-MVA®



**"THE POSITIVE IMPACT I HAVE SEEN IN OUR CLINIC IS ASTOUNDING." DR. JAMES FORSYTHE, ONCOLOGIST**

## AN INNOVATIVE AND UNIQUE SUPPLEMENT

LAMC/Poly-MVA is a unique compound created through an innovative process whereby the mineral palladium is bound to alpha lipoic acid and vitamin B1 (thiamine). When alpha lipoic acid, a unique and powerful antioxidant with multiple health benefits, is connected to an electrically charged mineral (palladium) and joined with thiamin(B1), the resulting complex is both water and fat soluble, dramatically increasing the entire body's absorption of Poly-MVA at the cellular level.\* With vitamins B1, B2 and B12, specific trace minerals and amino acids, this unique complex and formulation creates a synergy, action and function not found in any other supplement. It is designed to provide energy for the body's systems as well as protect cells from oxidation through its proprietary and patented formulation. Poly-MVA was formulated by Dr. Merrill Garnett, who over the past 48 years has conducted research on the actions of DNA within normal and abnormal cells. His studies focus on the intersection between biochemistry, physics and what Dr. Garnett calls "electrogenetics," the action of electrons and their energy transfer mechanism in relation to gene expression and proper metabolism. This product not only protects but supports cellular function which gives it properties like no other product in the world; this is why it can assist in so many situations.

- **Superior antioxidant and free radical protection \***
- **Fast acting, easy to use and quick results \***
- **Supports energy production at the cellular level \***
- **Enhances quality of life \***
- **May replace specific nutrients that may be depleted during certain therapies \***

*"In Stage IV adult cancers of any origin, improvement in quality of life issues is directly proportional to improvement to overall response rate. Even stable disease can be tolerated and changed into a chronic livable condition."*

*- James W Forsythe,  
MD, HMD*

Continuing research on Lipoic Acid Mineral Complexes (LAMC), including Poly-MVA, and what can be accomplished with cancer and other diseases is impressive and includes the following:

## AN INTEGRATED CANCER THERAPY

- ◆ Oncologist Dr. James W. Forsythe outcome studies:
  - 225 Patients, 6-yr Overall Survival Rate of 32%
  - 500 Patients, 5-yr Overall Survival Rate of 39%
  - 750 Patients, 54-mos Overall Survival Rate of 64%
- ◆ A recent study evaluated effects of Poly-MVA and radiation in two tumor models. Whole-body gamma radiation exposure once a week for 2 weeks and daily after 4 Gy of irradiation protected DNA damage in the peripheral blood. It also rendered protection against radiation-induced lowering of platelet count and appears to be responsible for its radio sensitizing and protective effects.
- ◆ Dr. Paul S. Anderson, NMD has shown the clinical synergy between LAMC and DCA; LAMC is neuroprotective and uniquely supportive in mitochondrial upregulation.
- ◆ Furthermore, Dr. Anderson has worked with LAMC in various clinical settings (neuro-degenerative illnesses, chronic fatigue/fibromyalgia and mitochondrial dysfunction) and has documented the following:
  - Poly-MVA showed consistent safety in all its uses
  - Poly-MVA improved quality of life in the oncology population
  - Poly-MVA added to multi-agent therapies for chronically ill patients led to improved response in symptoms and quality of life
- ◆ Ischemia studies demonstrated protection.
- ◆ Phase One human safety trials in hypertension completed.
- ◆ A 1000-patient oncological animal study resulted in an 86% improved quality of life.

**AMARC Enterprises is conducting an ongoing Quality of Life Study in conjunction with the Foundation for Advancement in Cancer Research. After four years and 366 patients, the results of this study show an impressive accumulated 68% positive outcome.**

Come by our booth for more information and a special offer!

**AMARC**  
ENTERPRISES

[WWW.POLYMVA.COM](http://WWW.POLYMVA.COM)

**866-POLY-MVA**  
**866-765-9682**



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