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.
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: Proposed 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 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

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.
Rationale for and Protocol for the use of combined Dichloroacetate (DCA) and Lipoic Acid Mineral Complex (LAMC) in advanced Cancer Patients as developed by Paul S. Anderson for patients treated at Anderson Medical Specialty Associates and in the Bastyr University Clinical Research Center (BCRC).

Cell Line Study:
We completed the assays using DCA and Lipoic Acid Mineral Complex (LAMC). These cell death assays utilized the U-87 glioblastoma cell line. This SRB protocol is identical to the one used by the NCI in their chemotherapy screen. (1)

Protocol:
In this experiment we chose 3 dosages of LAMC (as the proprietary formulation Poly MVA) (1,000; 500 and 100 uM) and 3 dosages of DCA (100, 50 and 10 mM). The glioblastoma cells are allowed to adhere to the culture plates for 24 hours. This was followed by a 48 hour exposure to LAMC alone, DCA alone and LAMC + DCA. The cells were then stained for viable cells and absorbance read for quantification.

Results:
The equivalent 8 tsp/day treatment dose of LAMC is the 1,000 uM, so we additionally looked at half the treatment dose (4 tsp/day equivalent) and 1/10th the treatment dose (approximately 3/4 tsp/day equivalent) of LAMC. Normally, there is no significant difference at the 100 uM LAMC dose, in these assay conditions (cells do die if you wait for a longer period of time), and approximately a 41% reduction at 500 uM of LAMC.

In regard to the DCA, the literature states that cell death occurs between 50 and 100 mM. Our data demonstrated a statistically significant reduction only at 100 mM. Normal cell death (i.e. neuropathy in animals occurs at approximately 75-80 mM equivalent dose). There was no different between glioblastoma cells treated with DCA at 10 mM and the control wells.
There appears to be a synergistic effect between LAMC and DCA. While neither 10mM of DCA nor 100uM LAMC resulted in a significant reduction in the number of glioblastoma cells alone, together they caused a statistically significant 17% reduction in cell survival. In addition, 10 mM of DCA increased the effectiveness of 500uM of LAMC from 41% cell death to 63% cell death.

In addition, the 50 mM DCA alone, which resulted in an only 15% reduction in cell survival, jumped to a statistically significant 45% reduction when only 100uM of LAMC was added. Interestingly, 5x less DCA (50mM below versus 10nM above) was needed to get about a 15% reduction decrease in cell survival when only 100 uM of LAMC was added to the 10mM DCA.
In summary:

The ability of LAMC and DCA to manipulate the metabolic cascade resulted is a synergistic effectiveness. This allowed less DCA to be utilized and still demonstrate maximum effectiveness. These in vitro data support the concept that LAMC and DCA could be used to together effectively, since they both potentiate the effectiveness of the other.

This cell line data alongside the mechanistic probability of synergistic activity between the two agents (outlined below) led to the idea to combine them as a therapy in cancer non-responders.

Why consider DCA with LAMC:

Theoretical overview for the potential synergy of LAMC and DCA - The cell line study recounted above as well as the potential for the two agents to have not only physiologic mutual benefit but a theoretical collaborative anti-tumor benefit. The proposed anti-tumor benefit is that the two agents may work in similar manners to effect tumor cell damage. The potential physiological benefit is that typical DCA use requires cell protective support during treatment. LAMC has been shown to be neuroprotective and helpful in supporting the mitochondrial complex. (2,3,4,5)
**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”

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 Garrett McKeen Laboratory, Inc.
   cellular DNA by POLY-MVA, a dietary supplement containing palladium lipoic acid formulation. Int. J. Low
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$^{60}$ 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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Compassionate Oncology

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, & CA19-9
- 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 chemotherapy

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

Second Outcome Study: Poly-MVA/Chemo/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 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 54 MONTHS

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

TOTAL SURVIVORS with Integrative Therapy

54 Months 750 PATIENT FIP STUDY 482/750 = 64%

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 Guidelines

- 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

FIP Blend (Forsythe Immune Protocol)

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

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 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.

*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.
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 radio therapy 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.

*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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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 regiment 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 “Herrheimer 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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A NEW UNIQUE SUPPLEMENT

Poly-MVA is a revolutionary compound created through an innovative process whereby the mineral palladium is covalently bound to alpha lipoic acid and associated with vitamin B1 (thiamine). When alpha lipoic acid, a unique and powerful antioxidant with multiple health benefits, is connected to the electrically charged mineral (palladium), the resulting complex has enhanced water and fat solubility, 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 design. Poly-MVA was formulated by Dr. Merrill Garnett, who over the past 40 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 "electroge-netics," 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 with quick results *
- Supports energy production at the cellular level *
- Enhances quality of life *

"While Poly-MVA's most important use is in the battle against cancer through the nutritional support it provides, its many rejuvenating and supporting effects on cellular function make it a super nutrient for optimum health. Poly-MVA offers free radical protection, higher energy level and is ideal for general daily support of health."
- Robert D. Milne, M.D.

THE NEXT ADVANCEMENT IN NUTRITION

The recent and continuing research on Poly-MVA and what it can accomplish with cancer patients and other health conditions is impressive and includes the following:

- Board Certified Oncologist Dr. James W. Forsythe, M.D., H.M.D., conducted a clinical observation of various Stage IV cancers with 207 patients over a 3-year period, observing a 56% overall positive response rate.
- KGK Synergize, Inc. confirmed its effectiveness in 8 cancer cell lines.
- Pre-clinical studies at a research university demonstrated positive results on various brain and breast tumor lines.
- Ischemia studies in animals demonstrated that acute, post-ischemic and prophylactic administration of Poly-MVA limits ischemic damage and protects cellular function.
- Calvert Laboratories, Inc. showed its efficacy in pre-clinical glioblastoma studies.
- Pre-clinical safety studies were confirmed with the phase one trials (human safety) of the LAPd Ischemia Study (PUNCH: Poly-MVA Utilized as Neuroprotection against Chronic Hypertension).
- Prostate and Non-Small Cell Lung cancer case studies have been documented, peer reviewed and published.
- A survey conducted by a leading veterinary oncologist revealed that 86% of the respondents felt that Poly-MVA improved their animal's quality of life.

An ongoing Quality of Life Study, as well as a Best Case Series documentation, are being conducted in conjunction with the Foundation for Advancement in Cancer Research. Further information on these programs can be found at www.facr.org or www.polymva.com.