**INTRODUCTION**

- Poly-MVA™ is a patented dietary supplement which contains, as its active ingredient, the novel Lipoic acid mineral (LAMC) complex.
- LAMC has a enhanced redox capacity. Electrochemistry data, as well as biochemical and cellular biology assays demonstrate that this polymer is significantly more efficient at accepting and transferring energy (electrons) than single molecules (e.g. vitamins).
- The Poly-MVA formulation also contains:
  - minerals
  - vitamins
  - and amino acids
- Publications have demonstrated its ability to increase aerobic metabolism, provide cellular energy to alleviate fatigue, and attenuate metabolic consequences of aging or disease.

**SAFETY**

- Poly-MVA has been available in the market for over 15 years.
- LAMC has completed all pre-clinical and clinical safety studies in anticipation of its current use in IND university studies (integrative treatment).

**Scientific Studies**

- **Model: Aged Hearts**
  - with age there is a decrease in the number and efficiency of the mitochondria
  - Animals were administered Poly-MVA (human equivalent dose of ½ tsp./day) for 30 days.
  - RESULTS: (Sudheesh et al., 2009)
  - Since Poly MVA enriched the metabolic load on the mitochondria, they demonstrated a more pronounced morphology and enhanced numbers.

- **Model: Aged BRAINS**
  - (Ajith et al, 2013 in preparation)
  - 24 month old rats were administered Poly-MVA (human equivalent dose of ½ tsp./day) or alpha lipoic acid (7.6 mg/kg) for 30 days.
  - RESULTS: Similar to the heart studies Poly-MVA elevated mitochondrial ATP in the aged brain by enhancing not only Krebs cycle dehydrogenases but also the activity of complexes I and IV.
  - Further, blood anti-oxidant status was improved.

**Role in Energy Metabolism**

- **#1** Thus far, it does not appear that LAMC affects metabolism by altering the trigger between anaerobic and aerobic metabolism: directly at pyruvate dehydrogenase, or via pyruvate dehydrogenase kinase.
- **#2** Since thiamine and lipoic acid act as cofactors in the conversion of pyruvate at Complex I, this appears to target LAMC’s ability to increase aerobic metabolism.

**Clinical Fatigue Studies**

- **Model: Transient Global Ischemia** – (Antonawich et al, 2004)
  - Poly MVA (2 and 4 tsp. equivalent dose) decreased ischemic damage following 5 minutes of bilateral carotid artery inclusion.

- **Post-chemotherapy canines in remission** (n=10)
  - Collected urine before and following 14 days on Poly MVA (human equivalent dose ½ tsp./day).
  - LAMC increased Krebs Cycle markers indicating an enhanced Cellular Energy.
  - A QOL owner survey reflected over 80% reporting of enhanced activity.

- **Multiple Sclerosis – associated fatigue:** Dr. Lauren Krupp, Stony Brook University
  - Current- IND approved clinical study of 20 patients

- **HIV-associated fatigue:** Dr. Gary Blick, Circle Medical (2009)
  - Statistically significant improvement in QOL/Energy/Fatigue: assessed using the Medical Outcomes Study (MOS) HIV QOL survey

- **Palliative Care Study:** CIPLA pharmacuticals (2010)
  - The following EORTC QOL C30 parameters demonstrated statistically significant patient improvement: Cognitive Functioning, Emotional Functioning, Social Functioning, Fatigue, Sleep Disturbances and Appetite Loss.

- **Chronic Fatigue Syndrome & Fibromyalgia:** Dr. Paul Anderson, Bastyr University.
  - Current – IRB study examining improved QOL after 6 weeks on Poly-MVA.