Building a Better Body

Clinical Animal Nutrition

INTEGRATIVE VETERINARY EDUCATION, INC.

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Standard Process® Cardiac Support

The cardiovascular system provides oxygen, nutrients, hormones, immune system components, and balances temperature and pH regulation to the entire body via the blood. The heart is the only muscle in a body that never gets a rest.

Certain cardiac diseases of dogs and cats are influenced by the diet yet optimizing nutrition can be difficult because these patients are often picky eaters. Processed diets often lack sufficient nutrients. This patient may require pharmacological levels of vitamins and minerals in order for the diseased heart tissue to maintain or regain function

Vitamin A deficiency leaves the heart a target for bacterial organisms with affinity for the heart valves. Vitamin B is necessary for the proper transmission of nerve impulses throughout the heart's electric circuitry. Canine patients with idiopathic dilated cardiomyopathy (IDC) when compared to normal dogs have been found to have much lower vitamin E levels. Increasing the availability of these specific vitamins and minerals, such as selenium, in cardiac patients just makes good sense.

Every tissue of the body is composed of individual cells each having specific nutrient requirements. These requirements are two fold – first for cellular maintenance and second to perform the function for which the cell was evolved. The micro-nutritional climate of every cell is very important, and that is the target of our nutritional program. The micro-nutrient environment of a cell not only encompasses the basic mineral, carbohydrates, and amino acids; but includes any factor which influences cellular function and possible bioavailability of these nutrients.

Select **Canine Cardiac Support™** or **Feline Cardiac Support™** when making a dietary consideration for a cat or dog with heart disease. It supports heart muscle and functionally related tissue while providing support for cardiac regeneration and its response to metabolic and physiologic demands.

Cases for Standard Process® Canine or Feline Cardiac Support™

- Heartworm disease
- Cardiac arrhythmias
- Valvular insufficiency or congestive heart disease
- Any condition that impairs optimal cardiovascular perfusion or function

References:

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- Carsten, Frick, Gaston, Kincaid. Clinical Applications of Applied Nutrition. *Standard Process Lecture Series, 2003.*
- National Research Council. Nutrient Requirements of Dogs and Cats. *The National Academies Press,* Washington DC, 2006.

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Building a Better Body!

What is Cytosol™ Extracts?

Dr. Royal Lee, the founder of Standard Process®, took great pains to analyze every aspect of plant and animal tissue before determining what was needed. As an engineer he designed many pieces of equipment that specifically enabled him to extract essential nutritional components from plants, animal organs, and even the cytoplasm of glandular cells. Cytoplasm contains cellular organelles plus nutrients, such as enzymes, hormone precursors, and synergistic cofactors that are the biochemical building blocks essential to cellular metabolism in their respective tissue. Extracts of such can assist the day-to-day function of a system that is operating at sub-optimal level by supplying all these nutritional factors which the body can immediately use to its benefit.

What people are saying about using Standard Process® products for their pets…

"Cardiac Support helped our Pico be a 'Come-Back Kid' from heart disease. He outlived his estimated 6 months by 2 years and didn't know he was sick!" - T. Kehoe

What does PMG™ Mean?

The letters "PMG" as seen on many product labels stands for protomorphogen™. In 1947, Dr. Royal Lee, the founder of Standard Process®, after years of research published his theories "Protomorphology: the Principles of Cell Auto-regulation." "Proto" coming from prototype and "morphogen" for morphology. It is this which sets these products far apart from any other nutritional supplements.

A protomorphogen is a chromosome end product made in the nucleus of the cell. It is that cellular chromosome component that is responsible for morphogenic determination of cell characteristics. It is the smallest unit of the gene system that guides the cell into its hereditary form as it grows, develops, or repairs itself. While PMGs are generally thermostable up to 700°C, oxidation can destroy some of the growth influencing potential of PMG. Without sufficient PMG in its chromatic the cell degenerates, de-differentiates, becomes senile and dies.

So how is PMG regulated? These tissue specific mineral containing nucleoproteins are antigenic in nature and stimulate the response of natural tissue antibodies (NTA). The NTAs control the level of extracellular protomorphogen in blood and lymph. Normally the body maintains a balance between PMG and NTA. When the NTAs exceed the peripheral circulating PMG level, the situation exists where the natural tissue antibodies could actually attack the diseased organ or tissue itself! Hence the need for PMGs. We can see many patients exhibiting this in auto-immune disease.

Introducing external tissue specific protomorphogen via the alimentary route can redirect the abundant natural tissue antibodies away from the organ. While PMG used in Standard Process® products is derived primarily from bovine and ovine species, a dog allergic to beef, for example, will not have the same allergic response to PMG because it is not protein derived from muscle.