Rationale For Enzyme Supplementation

Enzymes are delicate compounds participating catalytically in nearly every chemical reaction that occurs in the body. Digestion and all metabolic pathways rely on enzymes. They are the biochemical novelty that converts mere chemicals into the dynamic essence of life itself.

ENZYMES

WYSONG

PROBIOSYN™
For humans. A concentrated blend of food enzymes from vegetarian sources, combined with probiotic cultures. Also included are prebiotic oligosaccharides, which feed the probiotic cultures.

PANZYME™
For humans and animals. Supports the health of pancreatic enzymes and biliary secretions.

CHEEZYME™
For humans and animals. A natural seasoning formulated from cheese, food enzymes, digestive cultures, and over 74 trace minerals.

ZYMASE™
For humans or animals. A concentrated blend of four natural food enzymes from vegetable sources.

BIOTIC™ FORMULAS
Canine/Feline. Concentrated, non-processed natural food sources of active enzymes, probiotic cultures, amino acids, vitamins, minerals, fatty acids, and various other micronutrients. Choose AddLife™ (canine-feline), C-Biotic™ (canine), F-Biotic™ (feline), Biotic pH+™ (canine/feline, for maintaining an alkaline urine), or Biotic pH-™ (canine/feline, for maintaining an acidic urine).

PDG™
Canine/Feline. Provides natural archetypal nourishment – including vitamins, minerals, enzymes, and probiotic cultures – to animals that are anorectic, undernourished, or otherwise debilitated.

CALL OF THE WILD™
Canine/Feline. Used to balance a fresh meat diet or Wysong All Meat Canned Diets™.

Enzymes are found in all living cells, both vegetable and animal, and therefore are found in food. However, enzymes are inactivated above body temperature and are destroyed by the heat of food processing. Bread has no enzymes after baking, canned juice has no enzymes, breakfast cereals have no enzymes, and vegetables lose their enzymes once boiled. In other words, any food that is canned, pasteurized, baked, broiled, stewed, boiled, or fried has lost its inherent enzymes. The ubiquity of enzymes, the essential part of all foods, is simply ignored at the table. By consuming a diet high in enzyme-devoid cooked foods, nature is violated.

The significance of dietary enzymes has, by and large, escaped the scientific community. It is commonly believed that enzymes, being protein molecules, are broken down by digestion and are therefore of no more importance than any other protein in food. However, various significant pieces of evidence point to the understanding that enzymes within food can survive the digestive tract intact, and exert beneficial effects.

Enzymes released from ingested raw foods combine with food and water to aid in the breakdown of proteins, fats, and carbohydrates. Notice how a banana left on the shelf slowly softens until it becomes practically liquid. This is the action of enzymes within banana tissue. The banana has self-digested. All raw foods have this capacity. Otherwise, organic material would accumulate to virtually bury us.

This self-digestion capacity of food can occur in the digestive tract as well, if the enzymes are not destroyed by heat processing. This is the natural order of things: raw food is eaten, its inherent enzymes begin self digesting, and the remaining work is performed by enzymes secreted by the digestive organs – stomach, intestines, pancreas, and liver. However, when food enzymes are destroyed, the entire digestive workload is shifted to these organs. It's like having a friend who helps you move refrigerators. The two of you do it just fine. But when he no longer helps, something has to give, something will likely break... and it won't be the refrigerator.

If the body is forced to provide all digestive enzymes, it is reasonable to expect that not only will foodstuffs be incompletely digested, but that the continual one-sided effort of the body to secrete excess enzymes would eventually take its toll. For example, the pancreas is required to secrete more than its share of enzymes. As a result, it can become enlarged. Organ enlargement (hypertrophy) implies pathology. This is similar to liver enlargement due to chronic intake of excess alcohol, or exhaustion of endocrine islets in the pancreas as they are called upon to continually secrete insulin in response to high sugar intake. Stress and abuse of organs will often cause them to become enlarged, exhausted, involuted, and, finally, atrophied and life-threatening.

The differences in pancreatic weight when comparing subjects eating raw versus cooked food have been examined. Without exception, pancreatic weight, as a percent of body weight, is significantly higher in animals (laboratory mice) and humans eating a processed, enzyme-devoid diet (see below).

The law of adaptive secretion the quantity and type of enzymes needed. Therefore, if the food bolus does not predigest from its own inherent enzymes, the pancreas and other organs will be called upon to do all the work.

It was once believed that because the body can produce enzymes, there could never be a deficiency. However, not only enzymes, but other essential biochemicals normally synthesized by the body – such as certain amino acids, vitamins, and accessory nutrients – can become deficient through stress and exhaustion.

Based on enzymology research, the following concepts are now believed to be true:

1. The number of enzymes the body can produce in a lifetime is limited – there is no way to increase this number.

Pancreatic Weight as % Body Weight in Various Mammals		
Type of Mammal	Body Weight (gm)	Pancreas Weight as % Body Weight
Sheep	38,505	0.0490
Cattle	455,265	0.0680
Horse	543,600	0.0603
Camel	509,400	0.0556
Human	63,420	0.1400

Table 1

Pancreas Weight of Wild Mice Compared to Laboratory White Mice*

Species	*Pancreas Weight as a Percentage of Body Weight*	*Number of Specimens*
8 wild species on raw foods	0.32	141
laboratory mice on processed foods	0.84	11

*This experiment was designed to determine the pancreatic weight differences between various species of mice.

Table 2

2. Adding enzymes through raw foods and supplementation can allow the limited number of endogenous enzymes to be spared, since according to the law of adaptive secretion, the pancreas will only secrete the amount necessary.

In the race to create an ever expanding array of beguiling and profitable "value added" foods, nature is ignored. Sure we can digest puffed, fried, retorted, extruded, baked and otherwise heat tortured foods... for a time. But when digestive reserves run out with advancing age, and nutrients are no longer efficiently assimilated (we are what we can digest, not what we eat), chronic degenerative disease results. Heading the list is the number one complaint of adults – indigestion, including ulcers, acid reflux, bloating, gas, cramps, and food sensitivities.

The solution to this downward digestive spiral is an emphasis on raw natural foods beginning at the breast, and food enzyme supplementation to support digestive work if processed foods are eaten.

Digestion

The following are lines of reasoning and evidence proving the capability of food enzymes to survive the digestive process and exert their sparing effects on digestive organs.

The digestive tract breaks food down into small units of amino acids, peptides, mono-, di-, and oligosaccharides, monoglycerides, and free fatty acids that can then be absorbed into the gut mucosa. The primary digestive enzymes are those that break down proteins, carbohydrates, and fats.

Animals that have more than one stomach, such as cows and sheep, reveal an important aspect of

digestion: only one of their four stomachs contains digestive enzymes. The automatic digestion of food by the enzymes naturally found in the raw food, in conjunction with the digestive actions of microbial organisms, takes place in the other stomachs. Carnivores also eat raw foods that autodigest. Raw animal tissue contains the proteolytic enzyme cathepsin. Upon death, this enzyme is activated to break down tissues and cells, thus avoiding the need for the carnivore to do all the digestive work.

Food is first broken down in the stomach by the food's own inherent enzymes (if raw foods are eaten), and salivary enzymes in the upper (cardiac) portion of the stomach of monogastrics (having one stomach). This occurs without interference of gastric acids or pepsin. (It is a contradiction in conventional thinking which allows for the action of the enzyme ptyalin from saliva to assist in digestion, but ignores the action of food enzymes or suggests that they are inactivated.) In the lower stomach, the food mixes with acid resulting in protein hydrolysis. Then, pepsin begins to further break down proteins into dipeptides (two unit amino acid). In the upper small intestine, pancreatic enzymes and bile are then released to assist in digestion.

How do the enzymes present in raw food or supplements survive the harsh environment of the acidic stomach? First, every enzyme, whether endogenous (produced by the body) or exogenous (from sources outside of the body), has an optimum pH at which it functions best. (The pH at which an enzyme exhibits the greatest activity is considered its optimum pH.) It is therefore logical to assume that any food enzyme that functions optimally at the same pH as an internal digestive enzyme, will do so when consumed.

Organs/Glands of Enzyme Production and Digestion

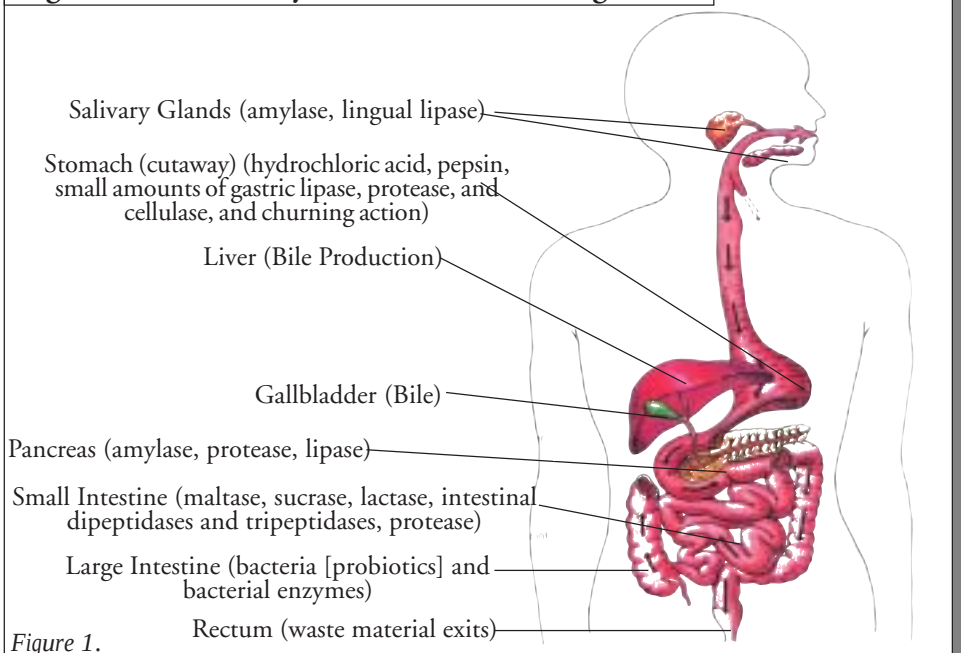

Figure 1.
From Understanding Nutrition, by Whitney, Hamilton, and Rolfes. 1990.

Furthermore, there is evidence that the optimal pH characteristics of an enzyme can be altered after treatment with stomach hydrochloric acid or pepsin. Therefore it appears that food enzymes can be modified to permit their function within the harsh environs of the digestive tract.

Second, exogenous food enzymes are effective due to the stomach's two distinct portions. The lower (pyloric) section is flat and constricted when empty. The upper (cardiac) portion has few, if any, enzyme-producing glands, and no peristalsis. Food initially enters the cardiac portion and can be digested by inherent food enzymes, supplemental enzymes, or salivary amylase. Once sufficient digestion has occurred, the food mass enters the acidic lower stomach passively.

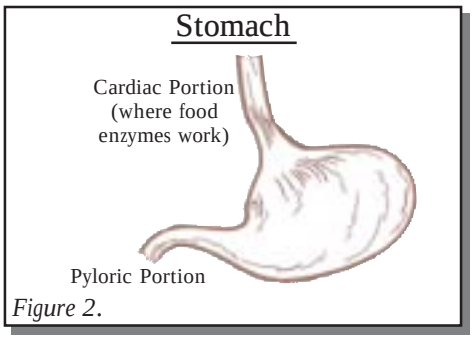

Figure 2.

There is an additional important finding to support the concept that exogenous enzymes are able to survive in the gastrointestinal tract. Studies show the presence of active amylase in the duodenum thus demonstrating the ability of enzymes to be reactivated. At extreme pH levels, enzymes will be irreversibly inactivated because of protein denaturation. However, there is a pH range at which enzymes can be reactivated. This process may involve either reversible ionization of functional groups in the active molecular site or in areas of conformational control. Moreover, the average secretion of hydrochloric acid is not as concentrated as once thought. These two findings suggest that food enzymes can aid digestion in the stomach, become reversibly inactivated as the food moves to the lower pyloric section, then become reactivated to further assist in digestion in the duodenum.

Digestive Enzymes

By supplying amylase, protease, lipase, and cellulase to a diet deficient in raw foods, enhanced enzymatic digestion in the upper stomach results

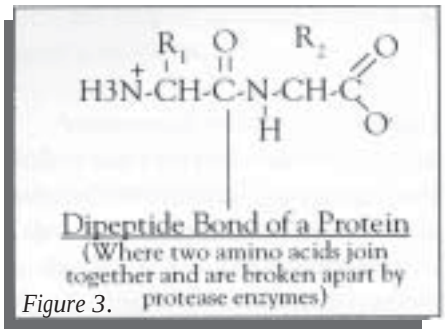

Figure 3.

in increased release and absorption of nutrients. Protease hydrolyzes (breaks down) proteins. Digestion of proteins begins in the stomach where protease splits the peptide bond linking amino acids. The products of protein digestion are free amino acids and small peptides of two to eight amino acids in size. Dipeptides and tripeptides are transported across the intestinal membrane more efficiently than free amino acids.

Amylase digests starch. Starch is a long chain of glucose molecules bonded at the alpha-1, 4 positions. Amylase cleaves the starch chains at this alpha-1,4 bond to form shorter water-soluble dextrins (8-molecule

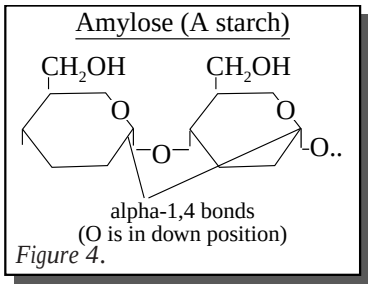

Figure 4.

glucose chains). Starch digestion begins in the mouth with salivary amylase. Its optimum pH is 6.7, and its action is inhibited by hydrochloric acid secretion when it reaches the lower stomach. Pancreatic amylase continues starch digestion in the upper small intestine (duodenum). The end products are oligosaccharides (saccharides varying two to ten molecules in size).

Lipase enzymes break down triglycerides (fats). Lipase is active in the duodenum and hydrolyzes fatty acids to yield glycerol, mono- and diglycerides, and free fatty acids. Fats are emulsified by bile salts and lecithin before being transported into the mucosa, then into the bloodstream via micelle microemulsions.

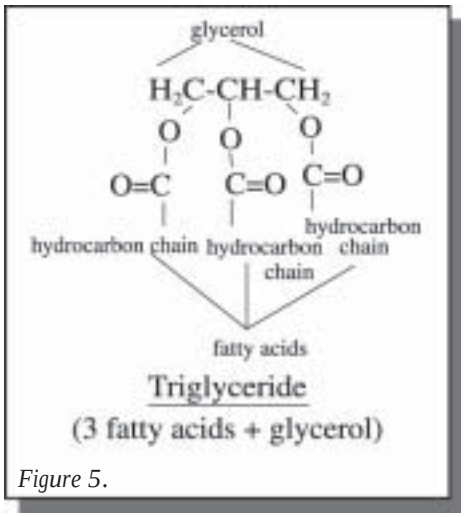

Figure 5.

Cellulase enzymes digest cellulose. Cellulose is the structural component of vegetation. Cellulose looks similar to starch, but the glucose molecules are bonded at the beta-1, 4 rather than the alpha-1,4 bonds in starch. The cellulose polymer (chain) can be very long, and the chains are coupled together by hydrogen bonds. Cellulase cleaves cellulose at the beta-1, 4 bond, resulting in disaccharides (2 glucose molecules) called cellobiose. The ability to digest cellulose is important in allowing essential nutrients found within the cellulose matrix to be released and utilized.

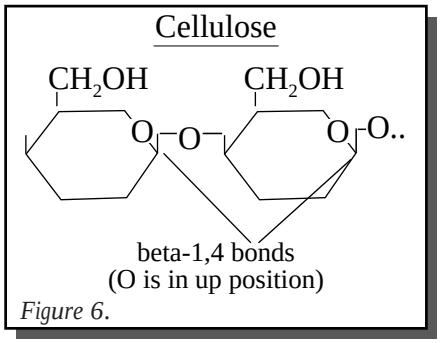

Figure 6.

Enzymes in Food

Because modern processed foods contain very few enzymes, eating more raw foods helps. However, even raw foods today do not contain natural levels of enzymes because poor farming techniques have depleted the soil of nutrients needed for their synthesis. Combine-harvested grains have lower enzyme content because grain seeds are dormant. Animals fed these grains have reduced nutrient digestion and absorption; therefore, enzyme supplementation is beneficial. Enzymes added to flour are of no benefit to the consumer because they are destroyed when baked. In addition, it is suspected that various chemical food additives can interfere with digestive enzyme function. Raw fruits and vegetables contain some enzymes, but not as many as higher calorie raw foods which are normally cooked and therefore are devoid of enzymes. Some foods, which are particularly high in enzymes and palatable when eaten raw, are: bananas, avocados, fresh olives, dates, figs, raw honey, raw sprouted cereal grains, and raw seeds (see Table 3.)

Enzyme Supplements

Enzymes for supplementation can be produced by microorganisms such as *Aspergillus* and *Bacillus* species. These organisms are cultured on various food substrates to produce the enzymes desired. The enzymes are then extracted and dried into a powder. Such cultured enzymes are excellent because of their optimum activity in the mildly acidic medium present in the upper stomach. (The pancreatic and salivary enzymes work best in a neutral to alkali media – see WellSpring™ monograph.)

Enzyme supplementation is important for anyone eating cooked or processed foods. Food enzymes result in increased nutrient absorption and more efficient use of nutrients with less demand on enzyme-secreting organs.

Additionally, more thorough digestion, particularly of potentially allergenic food proteins into small non-antigenic amino acids and peptides, can help to alleviate many food allergy conditions.

An essential feature of all natural foods is that they contain enzymes. An essential feature of all processed foods is that they do not contain enzymes. Could this be a key to the mystery of why all degenerative diseases (cancer, heart disease, diabetes, etc.) increase in societies where processed foods become a predominant portion of the diet?

The evidence would certainly argue that this is more than a coincidence. In any case, restoring the diet to its natural raw state and supplementing with food enzymes when processed foods are eaten is eminently logical since it matches natural creatures with their natural context.

Wysong enzyme-enhanced foods and supplements are beneficial additions excellent sources of enzymes for humans (or animals). Wysong Feline and Canine Dry Diets™ are enrobed with beneficial enzymes. AddLife™ (canine/feline), F-Biotic™ (feline), C-Biotic™ (canine), Call of the Wild™ (canine/feline), and PDG™ (canine/feline) provide additional enzymes for companion animals.

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.

Actual photo demonstrating the predigestion effect of Biotic™ enzymes

The stiff starch dough on the left represents the form starch takes in processed foods devoid of enzymes. Addition of Biotic™ enzymes to foods breaks down the starch molecules, once ingested, into smaller more easily assimilated nutrients. The puddle of predigested starch on the right resulted when Biotic™ enzymes were combined with the dough on the left.

Figure 7.

Enzymes in Food	
Food	Enzyme(s)
Apple	Peroxidase
Banana	Amylase, Maltase, Sucrase
Corn	Amylase
Egg	Lipase, Phosphatase, Peptidase, Peroxidase, Catalase, Oxidase, Amylase
Grapes	Peroxidase, Catalase
Kidney Beans	Amylase, Protease
Meat	Cathepsin
Milk	Catalase, Lactase, Amylase, Peroxidase
Potato	Invertase
Soybean	Oxidase, Protease, Urease
Wheat	Amylase, Protease

Table 3

Beneficial Effects of Enzyme Therapy (For Animals)
• Larger offspring and litters.
• Better weight maintenance.
• Increased resistance to stress.
• Better health and performance during gestation and lactation.
• Improved recovery from a variety of debilitating disease conditions.
• Improved skin condition.
• Decreased food sensitivities and allergies.

Table 4

Relevant Wysong Products

Human Enzyme Supplements

Probiosyn™ – A concentrated blend of food enzymes from vegetarian sources, combined with probiotic cultures and prebiotic oligosaccharides that feed the probiotic cultures.

Ingredients: Prebiotics (including Inulin), Mannanoligosaccharides, Digestive Enzymes, Probiotic Cultures (including Lactobacillus acidophilus, Lactobacillus bifidus, Lactobacillus plantarum, Enterococcus faecium), Birch Bark Extract and Natural Orange Flavoring.

Panzyme™ – A nutritional supplement designed to support the health of pancreatic enzymes and biliary secretions.

Ingredients: Natural Extracts and Concentrates of Pepsin, Ox Bile, Pancreatin (source of Lipase, Amylase, Protease); Dried Pancreas.

Zymase™ – A concentrated blend of four natural food enzymes from vegetable sources. Supplements home cooked or processed foods where enzymes have been destroyed as a result of heat.

Ingredients: Amylase, Protease, Lipase, Cellulase.

Cheezyme™ – A natural seasoning from cheese, food enzymes, digestive cultures, and over 74 trace minerals. Wonderful sprinkled on popcorn and salads.

Ingredients: White Cheddar Cheese, Monterey Jack Cheese, Swiss Cheese, Wysong Whole Salt™, Protease, Amylase, Lipase, Celllulase, Enterococcus faecium, Lactobacillus acidophilus, Lactobacillus bifidus, Lactobacillus plantarum.

Companion Animal Enzyme Supplements

AddLife™– designed for cats and dogs to enhance and augment the nutritional value of processed foods.

Ingredients: Chicken and Beef, Chicken and Beef Liver, Dried Yeast Culture, Aspergillus niger Fermentation Product, Aspergillus oryzae Fermentation Product, Ground Bone, Wheat Grass Powder, Barley Grass Powder, Organic Blueberries, Taurine, Artichoke, Lecithin, Enterococcus faecium Fermentation Product, Ground Sesame Seed, DL-Methionine, L-Carnitine, Dried Carrots, Dried Kelp, Garlic, Sage Extract, Rosemary Extract, Lactobacillus acidophilus Fermentation Product, Lactobacillus casei Fermentation Product, Lactobacillus lactis Fermentation Product, Lactobacillus plantarum Fermentation Product, Choline Chloride, Ascorbic Acid, Zinc Proteinate, Iron Proteinate, Vitamin E Supplement, Niacin Supplement, Pyridoxine Hydrochloride, Riboflavin Supplement, Vitamin A Acetate, Folic Acid, Biotin, Vitamin B_{12} Supplement, Vitamin D_3 Supplement.

C-Biotic™ (Canine) and F-Biotic™(Feline) – designed to enhance and augment the nutritional value of processed foods.

C-Biotic Ingredients: *Enzymatic Digest of Poultry Meat and Organs, Lecithin, Taurine, Dried Aspergillus niger Fermentation Product, Dried Aspergillus oryzae Fermentation Product, Ground Sesame Seeds, Dried Wheat Grass Powder, Dried Barley Grass Powder, Carrots, Kelp, Phytase, Dried Bacillus subtilis Fermentation Product, Dried Enterococcus faecium Fermentation Product, Dried Lactobacillus acidophilus Fermentation Product, Dried Lactobacillus lactis Fermentation Product, Dried Lactobacillus casei Fermentation Product, Dried Lactobacillus plantarum Fermentation Product, Dried Yeast Culture, Sage Extract, Rosemary Extract, Garlic, Artichoke, Potassium Amino Acid Complex, Choline Chloride, Niacin Supplement, Ascorbic Acid, Zinc Proteinate, Iron Proteinate, Vitamin E Supplement, Copper Proteinate, Calcium Pantothenate, Thiamine Mononitrate, Vitamin A Acetate, Riboflavin Supplement, Manganese Proteinate, Pyridoxine Hydrochloride, Folic Acid, Biotin, Vitamin B_{12} Supplement, Vitamin D_3 Supplement.*

F-Biotic Ingredients: *Enzymatic Digest of Poultry Meat and Organs, Lecithin, Taurine, L-Arginine, Dried Aspergillus niger Fermentation Product, Dried Aspergillus oryzae Fermentation Extract, Dried Enterococcus faecium Fermentation Product, Ground Sesame Seeds, Dried Barley Grass Powder, Dried Wheat Grass Powder, Carrots, Kelp, Sage Extract, Rosemary Extract, Garlic, Artichoke, Phytase, L-Carnitine, Catnip, Dried Bacillus subtilis Fermentation Product, Dried Lactobacillus plantarum Fermentation Product, Dried Lactobacillus acidophilus Fermentation Product, Dried Lactobacillus casei Fermentation Product, Dried Lactobacillus lactis Fermentation Product, Dried Yeast Culture, Choline Chloride, Ascorbic Acid, Zinc Proteinate, Iron Proteinate, Vitamin E Supplement, Niacin Supplement, Manganese Proteinate, Calcium Pantothenate, Thiamine Mononitrate, Copper Proteinate, Pyridoxine Hydrochloride, Riboflavin Supplement, Vitamin A Acetate, Folic Acid, Biotin, Vitamin B_{12} Supplement, Vitamin D_3 Supplement.*

Relevant Wysong Products

Companion Animal (Continued)

Biotic pH+™ (canine/feline) – designed for animals needing assistance generating and maintaining an alkaline urine to help prevent oxalate, cystine, or urate crystal formation.

Ingredients: Yeast Culture, Chicken and Beef, Chicken and Beef Liver, Calcium Carbonate, Magnesium Ascorbate, Lecithin, Taurine, Dried Aspergillus niger Fermentation Product, Dried Aspergillus oryzae Fermentation Product, Dried Enterococcus faecium Fermentation Product, Potassium Citrate, Vitamin B_6 Supplement, Ground Sesame Seeds, DL-Methionine, L-Carnitine, Barley Grass Powder, Wheat Grass Powder, Organic Blueberries, Carrots, Kelp, Sage Extract, Rosemary Extract, Garlic, Artichoke, Dried Bacillus subtilis Fermentation Product, Dried Lactobacillus plantarum Fermentation Product, Dried Lactobacillus acidophilus Fermentation Product, Dried Lactobacillus casei Fermentation Product, Dried Lactobacillus lactis Fermentation Product, Choline Chloride, Ascorbic Acid, Zinc Proteinate, Zinc Sulfate, Ferrous Sulfate, Iron Proteinate, Vitamin E Supplement, Niacin Supplement, Manganese Sulfate, Manganese Proteinate, Calcium Pantothenate, Thiamine Mononitrate, Copper Proteinate, Copper Sulfate, Riboflavin Supplement, Sodium Selenite, Vitamin A Acetate, Folic Acid, Biotin, Vitamin B_{12} Supplement, Vitamin D_3 Supplement.

Biotic pH-™ (canine/feline) – designed for animals needing assistance generating and maintaining an acidic urine to help prevent struvite crystal formation.

Ingredients: Chicken and Beef, Chicken and Beef Liver, DL-Methionine, Taurine, Lecithin, Dried Aspergillus niger Fermentation Product, Dried Aspergillus oryzae Fermentation Product, Dried Enterococcus faecium Fermentation Product, Sesame Seeds, L-Carnitine, Barley Grass Powder, Wheat Grass Powder, Organic Blueberries, Carrots, Kelp, Garlic, Artichoke, Sage Extract, Rosemary Extract, Catnip, Dried Bacillus subtilis Fermentation Product, Dried Lactobacillus plantarum Fermentation Product, Dried Lactobacillus acidophilus Fermentation Product, Dried Lactobacillus casei Fermentation Product, Dried Lactobacillus lactis Fermentation Product, Dried Yeast Culture, Choline Chloride, Ascorbic Acid, Zinc Proteinate, Iron Proteinate, Vitamin E Supplement, Niacin Supplement, Manganese Proteinate, Calcium Pantothenate, Thiamine Mononitrate, Copper Proteinate, Pyridoxine Hydrochloride, Riboflavin Supplement, Vitamin A Acetate, Folic Acid, Biotin, Vitamin B_{12} Supplement, Vitamin D_3 Supplement.

Call of the Wild™ (canine/feline) – designed to balance fresh meat meals. Mimics archetypal feeding habits by providing organ meat, fats, connective tissue proteoglycans, minerals, vitamins, enzymes, probiotics, herbs and innumerable other micronutrients in the levels and proportions found in natural prey.

Ingredients: Chicken and Beef, Chicken and Beef Liver, Calcium Carbonate, Lecithin, Kelp, Plums, Dried Seaweed Meal, Milk Calcium, Ground Bone, Coral Calcium, Barley Grass Powder, Wheat Grass Powder, Organic Blueberries, Carrots, Dried Lactobacillus acidophilus Fermentation Product, Dried Lactobacillus casei Fermentation Product, Dried Lactobacillus lactis Fermentation Product, Dried Lactobacillus plantarum Fermentation Product, Dried Enterococcus faecium Fermentation Product, Ground Sesame Seeds, DL-Methionine, L-Carnitine, Dried Yeast Culture, Dried Aspergillus oryzaeFermentation Product, Dried Aspergillus niger Fermentation Product, Taurine, L-Arginine, Phytase, Garlic, Artichoke, Sage Extract, Rosemary Extract, Choline Chloride, Ascorbic Acid, Zinc Proteinate, Iron Proteinate, Vitamin E Supplement, Niacin Supplement, Manganese Proteinate, Calcium Pantothenate, Thiamine Mononitrate, Copper Proteinate, Pyridoxine Hydrochloride, Riboflavin Supplement, Vitamin A Acetate, Folic Acid, Biotin, Vitamin B_{12} Supplement, Vitamin D_3 Supplement, Milk Protein Extracts.

PDG™ (canine/feline) – provides natural archetypal nourishment including vitamins, minerals, enzymes, and probiotic cultures to animals that are anorectic, undernourished, or otherwise debilitated. Can be used to boost nutrition of pet foods or made into a gruel or paste to administer when animal stops eating.

Ingredients: Enzymatic Digest of Poultry Meat and Organs, Dried Egg, Hydrolyzed Coconut Oil, Dried Aspergillus niger Fermentation Product, Dried Aspergillus oryzae Fermentation Product, Dried Cottage Cheese, Dried Animal Plasma, Composted Sea Vegetation, L-Arginine, Carrot Powder, Garlic, Psyllium, Amylase, Protease, Lipase, Cellulase, Sage Extract, Rosemary Extract, Dried Enterococcus faecium Fermentation Product, Dried Bacillus subtilis Fermentation Product, Dried Lactobacillus acidophilus Fermentation Product, Dried Lactobacillus bifidus Fermentation Product, Dried Lactobacillus bulgaricus Fermentation Product, Dried Lactobacillus plantarum Fermentation Product, Milk Protein Extracts, Vitamin E Supplement.

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