GLYCEMIC RESEARCH LABORATORIES
GLYCEMIC SOLUTIONS
111 SECOND AVENUE N.E.
SUITE 512
ST. PETERSBURG, FL 33701

STATEMENT OF INVESTIGATION
PET FOOD ASSESSMENT

RESEARCH CONDUCTED FOR:

Natural Polymer International Corporation (NPIC)
1909 10th Street
Suite 100
Plano, Texas USA 75074

Telephone:	**(972) 509-0449**
Contact:	**Shin Shi Chen**
Analytical Trials:	**Pet Treats/Canine**
Report Date:	**August/September 2009**
Test Foods:	**Get Naked Low Calorie Biscuits** **Twistix Oral Care**
Report ID:	**NPIC-1-2009**

PROTOCOL

Assessment of the Glycemic Perimeters, including the Diabetic and Metabolic Responses were investigated on two (2) orally ingested pet products (herein the TEST FOODS) submitted by Natural Polymer International Corporation **(**NPIC). Standard protocols were followed per Glycemic Research Institute *Protocols for Analyzing & Testing Pet Foods 2009*.

The Test Foods were submitted in a ready-to-eat form.

IMPAIRED GLUCOSE METABOLISM IN THE CANINE

It is currently estimated that one out of every 100 dogs seen by a practicing veterinarian is diabetic. Obesity is estimated to occur in approximately 40% of the dog population.

In older dogs, (10% of the canine population in America are 11 + years old) diabetes and impaired glucose metabolism disorders are more common.

Impaired glucose metabolism in the canine is directly tied to hypoglycemia, diabetes (insulin-dependent and non-insulin dependent), obesity, advanced age (geriatrics), and can occur during canine gestation (pregnancy).

Disorders of glucose metabolism are also triggered by ingestion of high glycemic pet foods and treats, as well as ingestion of high glycemic human foods, such as bananas, rice, rice flour, brown rice flour, corn, and bread. These foods are to be avoided in the canine diet.

If high glycemic pet foods, treats, and pet diets are administered over a long period of time, the canine risk of diabetes and other glucose-metabolism disorders rises as age progresses. Diagnosis is often delayed, as the diagnosis of diabetes or impaired glucose metabolism in dogs and cats typically occurs after a hyperglycemic episode for the animal.

Borderline diabetes and other disorders involving *moderate* impairment of glucose metabolism, exhibit a significant risk of misdiagnosis, with undiagnosed progression of symptoms continuing over the lifespan of the canine, resulting in reduced lifespan.

CANINE RESPONSE TO PET FOODS & TREATS

Oral ingestion of any pet food, pet treat, or human food results in a specific postprandial glucose response. This response is characterized by an elevation in blood glucose levels, which range from normal to abnormal.

Following ingestion of a high glycemic meal, blood glucose and insulin levels are over-elevated.

The postprandial glucose and insulin response to a canine meal is extremely important in *avoiding* accelerated aging, obesity, and risk of impaired glucose metabolism disorders. Maintaining long-term health and homeostasis in the canine mandates *avoidance* of high glycemic foods and treats.

Ingestion of high glycemic foods in the canine exacerbates hyperinsulinemia, a metabolic disorder associated with obesity and diabetes.

Avoiding the negative effects of hyperinsulinemia requires avoidance of high glycemic ingredients fed to the canine. Lowering serum insulin levels controls the negative effects of hyperinsulinemia and reduces the risk and progression of canine obesity and diabetes.

Hyperinsulinemia also increases the risk of canine cancers, and reduces long-term survival in canine hormonal cancers.

DIETARY FIBER IN CANINE FOODS

Dietary fiber exhibits an effect on the glycemic and diabetic properties of all foods and beverages. This includes canine pet foods and treats.

Controlling the glycemic and diabetic effects of pet foods has a profound effect on risk of diabetes in companion animals. The utilization of certain soluble fibers, such as guar and pectin, has been found to yield a *reduced* postprandial rise in blood glucose levels.

However, not all soluble fibers provide benefits, and some result in undesirable side effects for the animal including diarrhea, flatulence, and abdominal cramping in both humans and companion animals.

The selection and inclusion of soluble fibers added to pet food and treats must be judicious, with specific focus on fibers that deliver glycemic benefits and are free from gastrointestinal side effects.

REVIEW SUMMARY

A Low Glycemic food plan, including Low Glycemic pet foods and treats, is the most effective means of preventing and controlling the postprandial glycemic and insulin response in canine companion animals, thereby preventing long-term impaired glucose/insulin metabolism disorders, and extending lifespan.

The postprandial regulation of glucose and insulin response in animals is required for longevity, reduced risk of obesity, and diabetes. This is particularly relevant in prevention of chronic over-elevation of glucose and insulin, which results in impaired glucose/insulin metabolism.

In the healthy canine, with no evidence of diabetes, prevention of the development of impaired glucose metabolism is recommended via administration of a Low Glycemic food plan.

This approach can prevent the onset of non-genetic chronic diabetes, and is particularly effective in managing the geriatric, obese, or diabetic companion animal.

TEST FOOD RESULTS

(2) TEST FOODS SUBMITTED:

Get Naked Low Calorie Biscuits
Twistix Oral Care
NPIC-1-2009

Test Food Number 1: Get Naked Low Calorie Biscuits

This product was duly submitted to Glycemic Research Laboratories for analysis per the *Glycemic Research Institute Protocols for Analyzing and Testing Pet Foods.* The results of said Protocols are as follows:

Get Naked Low Calorie Biscuits qualify as a Low Glycemic Pet Treat and additionally qualify to utilize the Glycemic Research Institute Seal of Approval for Low Glycemic Pet Treats (per the guidelines as outlined by the Glycemic Research Institute).

Test Food Number 2: Twistix Oral Care

This product was duly submitted to Glycemic Research Laboratories for analysis per the *Glycemic Research Institute Protocols for Analyzing and Testing Pet Foods.* The results of said Protocols are as follows:

*Twistix Oral Care does **not** qualify as a Low Glycemic Pet Treat and additionally does **not** qualify to utilize the Glycemic Research Institute Seal of Approval for Low Glycemic Pet Treats (per the guidelines as outlined by the Glycemic Research Institute).*

Note: The first ingredient in *Twistix Oral Care* is listed as "Brown Rice Flour." This type of flour is quickly digested and absorbed, which elevates blood glucose and insulin levels in the canine.

Canine and human food formulas that contain sugar beet fiber do not elicit a significant reduction in blood glucose ($P<0.05$) and/or serum insulin response ($P<0.025$), and/or serum hydroxyproline response ($P<0.025$).

In addition, barley flour has a high glycemic index.