KIBOW BIOTICS™

A PROBIOTIC APPROACH FOR UREMIC TOXIN REMOVAL

www.kibow.com

KIBOW BIOTECH'S BREAKTHROUGH VETERINARY PRODUCT

Using the bowel's capacity to substitute for failing kidney function

With its proprietary standing, first-to-market position and growing recognition in the international nephrology community, Kibow Biotech is positioned to become the world's first and leading provider of products that utilize the bowel's capacity to substitute for failing kidney function.

Kibow Biotech – doing the work of the kidneys in the bowel.

A GROWING PROBLEM

Chronic Renal Failure (CRF) is a progressive and irreversible disease, when the kidneys gradually lose their capacity to excrete waste by-products of metabolism.

In the U.S., CRF is the second leading cause of death in companion animals, following cancer. It may also be the leading cause of death in older cats [www.animalsnaturally.com, www.parkvets.com, numerous veterinary professionals].

As in humans, CRF in pets may result from another "primary" disease, such as diabetes or cardiovascular disease, or it may occur due to a host of other problems. In a diseased state, the body puts excessive pressure on the kidneys to perform all of their functions: excretory (uremic toxin and fluid removal), secretory (hormonal) and regulatory (homeostasis).

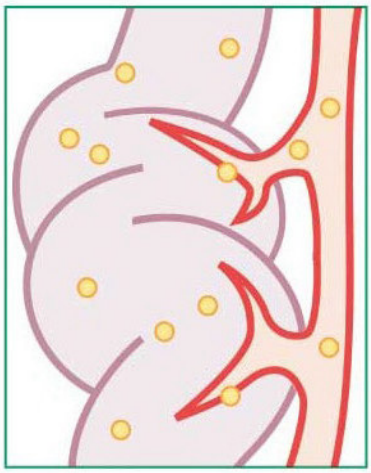
LIMITED SOLUTIONS

Up till now the only accepted method for treatment of renal failure is dialysis or kidney transplant. Expense and scarce availability prohibit these procedures for many people, especially outside of developed countries. Needless to say, the same is true for pet animals. Prior to complete kidney failure, which qualifies a patient for the above treatments, little is done to address the elevated levels of uremic solutes.

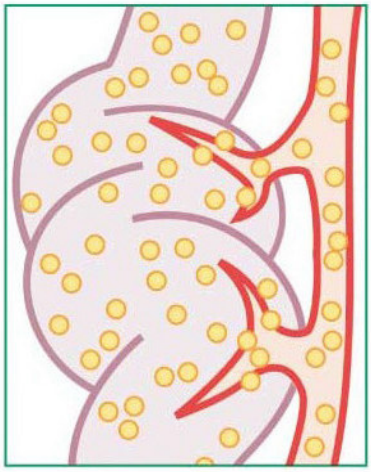
Current treatment consists of medication to control the underlying condition (diabetes, hypertension) and some dietary restrictions. Presently, nothing is available to abate the build-up of uremic solutes.

KIBOW OFFERS HOPE

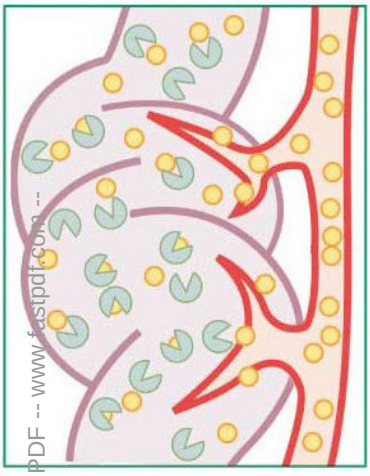
Kibow Biotech is the first and the only company with a novel approach of removing harmful uremic toxins in pre-dialysis patients, instead of waiting for the disease to advance to end stage.



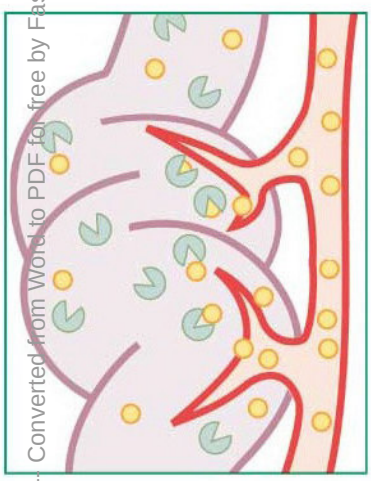
Even under normal healthy conditions, some amounts of uremic solutes flow into the large intestine by diffusion.



In kidney failure, the toxic uremic solutes accumulate in blood. They continue diffusing into the large intestine, albeit in dramatically higher quantities.



Kibow Biotics® formulation metabolize the diffused toxins...



...maintaining the concentration gradient and continuing the process, effectively lowering uremic solute levels in blood serum.

A TARGETED BACTERIOTHERAPY PRODUCT

BENEFIT TO THE PETS

Kibow Biotics® is an easy-to-use bacterial therapy product administered orally to help reduce uremic toxin build-up. When used regularly, this product can help:

- support healthy bowel function
- break down toxic substances
- eliminate excess waste materials
- enhance a pet's immune system

A MEDICAL BREAKTHROUGH

Probiotics are live non-pathogenic microbes that improve the intestinal microfloral balance and benefit the host's overall health. They can be combined with certain nutrients called *prebiotics* to form functional compositions referred to as *synbiotics*.

Kibow Biotics® is a synbiotic composition, which creates an overall probiotic effect in the intestines, helping restore the proper balance of microflora and augmenting the numbers of native microorganisms. Its main function is to metabolize the uremic toxins, slowing down their build-up, effectively slowing further damage to the kidneys.

WHAT IS IN KIBOW BIOTICS®?

Each capsule contains viable cell cultures of the following:

- *Streptococcus thermophilus*
- *Lactobacillus acidophilus*
- *Bifidobacterium longum*

Our strains of these bacteria show affinity for many uremic toxins *in vitro*, and exhibit promising behavioral trends in rats and minipigs with surgically induced renal insufficiency.

The capsules also contain a prebiotic – psyllium husk. This prebiotic is needed to aid the proliferation of our bacteria in the bowel. Each capsule is enteric-coated to allow the live bacterial cells to reach the large intestine, where the uremic solutes can be metabolized. Without this coating, the vast majority of the cells would die or become inactive in the harsh environments of stomach and small intestine.

Since the product contains live cells, it should be refrigerated for the best results.

HOW DOES TOXIN REMOVAL HAPPEN?

Kibow's technology rests on the scientific concept of "Enteric Dialysis™": as concentrations of uremic solutes increase in blood, they start diffusing through the capillary walls into the large intestine, where they are removed. The concentration gradient is maintained, and the process continues until desired sufficient quantities of toxins have been removed.

SUPPORTING R&D

LABORATORY STUDIES

In Vitro (Kibow Biotech, Philadelphia, PA)
Numerous tests and evaluations performed at our laboratory have shown that our specific strains of bacteria have high affinity for major uremic solutes, such as urea and creatinine.

Simulated Human Intestinal Microbial Ecosystem SHIME (Ghent University, Belgium) Studies with the SHIME apparatus indicated that our bacterial strains do not negatively impact the delicate ecosystem of the large intestine, and confirmed the efficacy of our formulation in a simulated intestinal environment.

ANIMAL STUDIES

Rats (Thomas Jefferson University, Philadelphia, PA)
Several different preliminary formulations have shown beneficial effect in extending the life of rats with surgically induced renal insufficiency. After 120 days, two formulations showed the best results, with higher survival rates of 66% and 83% in respective treatment groups, as compared with a 33% survival rate in the placebo group.

Minipigs (Indiana University, Indianapolis, IN)
Our formulation helped stabilize blood urea nitrogen levels and improve serum creatinine levels in minipigs with surgically induced renal insufficiency. These are the primary uremic markers found in large quantities in kidney failure mammals.

NIH AND USAID SUPPORTED PRODUCT DEVELOPMENT

Kibow's R&D has been partly funded by the National Institute for Diabetes, Digestive and Kidney Diseases (NIDDK) of NIH through two consecutive fast-track grants in the amount of $1.9 million. Additional $600,000 contingency grant award has been presented to us by USAID. Kibow's approach is viewed as significant, because "renal failure is a growing and costly health problem" and the possibility of pre-dialysis intervention with a probiotic "offers hope of delaying the need for dialysis by slowing down uremic toxin accumulation. If successful, the societal and commercial implications would be profound."

SCIENTIFIC REVIEW

To ensure quality, Kibow Biotech
- conducts rigorous animal and human clinical trials;
- engages its expert Scientific Advisory Board in the review of trial methods and results;
- pursues new lines of research to improve its products.

These commitments should encourage the practitioners to confidently recommend Kibow's products to their patients.

PATENTS AND PUBLICATIONS

Two U.S. patents have been approved (09/855,346 and 60/131,774). Three more U.S. and two international PCT patent applications are under review.

In addition, 25 abstracts have been presented at major nephrology meetings and related medical conferences. Six more were recently submitted for review to be presented at the annual American Society of Nephrology conference.

An article presenting the results of our rat animal studies has been approved recently published in World Scientific Journal.

Currently, no other similar products are available to address the symptoms of renal insufficiency. Several FDA-approved drugs for end-stage renal disease (ESRD) patients also use the enteric dialysis™ approach.

ORDERING INFORMATION

Samples can be purchased at
www.kibow.com
Either pet owners or veterinary professionals can reach us by calling
1-888-271-2560
or emailing us at
ask@kibow.com

EARLY WARNING SIGNS OF KIDNEY DISEASE

- MORE FREQUENT DRINKING AND URINATION
- WEIGHT LOSS
- ANEMIA
- ULCERS IN THE MOUTH AND GI TRACT
- FREQUENT VOMITING AND DIARRHEA
- UNUSUALLY STRONG BREATH ODOR
- DECREASED APPETITE
- LETHARGIC BEHAVIOR

Problems often manifest themselves sporadically, with long periods of seemingly good health in between.

Periods of sickness may develop after a pet experiences stress or experiences drastic changes to its environment.

希望

"Kibow", shown here in Kanji script, means "hope" in Japanese.

The name signifies our goal of doing the **ki**dney's work in the **bow**el: **Ki-Bow**

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WE ARE WORKING CLOSELY WITH VETERINARIANS TO ASSIGN PROPER DOSAGE TO YOUR PET

ANIMAL DOSING CHART

Weight, lbs (kg)	Morning dose*	Evening dose*
Less than 2.2 lbs (<1kg)	1	0
2.2 – 4.4 lbs (1-2 kg)	1	1
4.4 – 8.8 lbs (2-4 kg)	2	1
8.8 – 17.6 lbs (4-8 kg)	2	1-2
17.6 – 35.2 lbs (8-16 kg)	2	2
35.2 – 70.4 lbs (16-32 kg)	2-3	2-3
More than 70.4 lbs (>32 kg)	3	3

* A preliminary consultation with your veterinarian prior to initiating treatment is strongly advised

Note: We advise to administer a whole capsule. If your pet will not eat it whole, we recommend that you place the capsule in a semisolid food (something that will not be chewed: ice cream, yogurt, peanut butter) and feed it to your pet.

Visit our online store at WWW.KIBOW.COM to try our product.

As Kibow completes the development of its targeted probiotic product for both animals and humans, R&D continues on a bio-pharmaceutical drug for treatment of ESRD. Limited human safety study with our probiotic food product was conducted in 2004 among volunteering Kibow employees, producing encouraging results. Additional clinical studies are being planned for the following year to gain validating evidence in support of our concept.

For any related inquiries, to express concerns or obtain additional information, please contact us at the address given below.

KIBOW BIOTECH INC.
4629 West Chester Pike
Newtown Business Center
Newtown Square, PA 19073
Phone: 1-888-271-2560
Fax: 610-353-5131
E-mail: ask@kibow.com