

# Technical Support

TS013

Argizyme™ Product #7050

## Argizyme™ - Nutritional Support for the Urinary System

### Kidney and Renal Function

The primary function of the urinary system is to help the body control the composition and volume of blood. It removes and restores selected amounts of solutes and water. The system consists of the kidneys, the ureter, the urinary bladder and the urethra. The kidneys regulate key ingredients in blood: water, electrolytes and blood pH. They also excrete waste products and toxic materials processed by the liver. By regulating water excretion in the urine, they help regulate blood pressure as well. Each kidney contains approximately 1 million filtration units called nephrons, which filter about 425 gallons of fluid daily. Only a small fraction of the filtered fluid, about 2 liters, leaves as urine.

The filtrate from the glomerulus contains small molecules like water, dissolved minerals - - sodium, potassium, chloride - - urea, glucose and creatinine. Most electrolytes, glucose and water are resorbed and recycled. Therefore, urine re-presents concentrated wastes. The filtrate passes through tubules of the nephron. They help regulate the sodium content and the pH of the blood by exchanging electrolytes like ammonia, hydrogen ions, potassium, chloride and bicarbonate.

Hormones regulate kidney function. Antidiuretic hormone increases water loss from cells, allowing more water to pass back into the blood. Aldosterone levels increase in response to decreased blood sodium, leading to sodium resorption and water retention. The kidneys also produce hormones: calci-triol (from vitamin D), erythropoietin and renin.

### Nutritional Support

#### Antioxidants

*Natural, mixed carotenoids.* Carotenoids including alpha and beta carotene, lutein and zeaxanthin, function as scavengers of singlet oxygen, especially at low oxygen tension as exists within cells. A possible synergy between carotenoids and tocopherols has been suggested based on in vitro studies (1). Carotenoids are implicated in maintaining a healthy immune response (2). Natural, mixed carotenoids were better absorbed and functioned as more effective antioxidants in human than synthetic beta carotene (3).

*Vitamin C.* Multiple functions of vitamin C are noted for this essential nutrient. It is able to scavenge free radicals and protect cells independently of alpha tocopherol (4). Vitamin C, by interacting with vitamin E and Coenzyme Q10, is believed to protect cell membranes from peroxidation (5).

### Amino Acids

*L-leucine and L-valine.* These two amino acids represent essential, branched chain amino acids. As such, they are preferentially used by skeletal muscle as energy sources.

Supplemental sources can increase blood levels of these amino acids. Metabolic acidosis can induce negative nitrogen balance, including increased oxidation of branched chain amino acids by muscle (6). Correction of metabolic acidosis normalized intracellular concentrations of branched chain amino acids in an animal model. Valine in particular supports salt transport and facilitates glucose oxidation (7).

*L-Alanine.* This amino acid is formed by the transamination of glutamate with pyruvate in the liver, kidney and intestine. Therefore, carbohydrate metabolism is linked to amino acid metabolism in these tissues. Blood alanine is transported to these organs, where it can be transaminated back to pyruvate, which yields glucose via the gluconeogenic enzyme pathway.

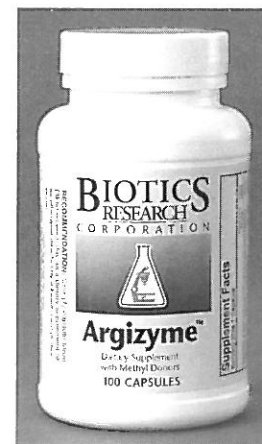
### Fiber and Flavonoids

*Rice bran.* Dietary fiber is fermented by intestinal bacteria to produce short chain fatty acids, an essential fuel and trophic factor for colonocytes (8). By helping to maintain gut integrity, short chain fatty acids can decrease the aspects of leaky gut (9). Bran-enriched diets for animals were shown to increase gastrointestinal transit time and thus decrease retention of a food carcinogen by liver and kidney (10). Rice bran supplemented diets were reported to decrease urinary calcium excretion and to increase urinary oxalate and urinary phosphate in people with idiopathic hypercalciuria (11).

*Beet powder.* Powdered beets added to the diet of lab animals apparently inhibited the activity of hepatic ethoxycoumarin O-deethylase activity (12). Beets provide betaine and trimethylglycine which serves as a universal methyl donor for methyl transfer reactions. In addition, red beet pigments represent anthocyanidins. This class of flavonoids possesses marked antioxidant properties (13).

### Other nutritional support

*Tillandsia.* Tillandsia contains coumarin, a resin with antiviral properties, in addition to minerals such as iron and magnesium, fiber, beta carotene, chlorophyll and B complex vitamins. An antibacterial component was isolated in 1952 and a component with weak estrogenic activity in 1953 (14). Folk traditions have employed Tillandsia as a tonic. Neonatal bovine liver. Biotics neonatal glandulars are obtained from newborn animals. The glands characteristically possess high anabolic activity. The glands are processed to maintain polypeptides and other nutritionally important factors to support specific organ function: kidney, thymus and liver.



It is worth pointing out that Biotics Research Corporation's neonatal glandulars have been minimally exposed to environmental factors to which adult animals have been subjected. For example, independent lab testing indicated that levels of pesticides if present at all, are below the limits of detection.

#### References

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#### Product Information

*Argizyme™* comes in 100 tablets per bottle.

Product Adjuncts: Renal Plus™, Cytozyme-KD™.

***For more information, contact the Client Services Department or one of our Technical Consultants at Biotics Research Corporation.***

#### ***Each capsule supplies:***

Argizyme™	.....785	mg
Vitamin C (calcium ascorbate)	.....15	mg
Natural Mixed Carotenoids	.....1000	I.U.
Superoxide Dismutase	......20	mcg
Catalase	......20	mcg



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The Best Of Science And Nature.

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