



FEATURES:

A TASTY, FLAVORED POWDER:

- Conveniently administered by adding directly to food
- Flavored with hydrolyzed chicken protein

SOLD IN CARTONS OF 30 INDIVIDUAL PACKETS

ACTIVE INGREDIENTS:

Beta (1,3)/(1,6) Glucan

Omega-3 Polyunsaturated Fatty Acids (PUFAs), including EPA and DHA

Vitamins:

- A, D3, E, Thiamine, Riboflavin, Niacin, Pyridoxine, Cobalamin

Minerals:

- Calcium, Phosphorus, Iron, Copper, Manganese, Zinc

REFERENCES:

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- 4 Stier H, Ebbeskotte V, Gruenwald J. Immune-modulatory effects of dietary yeast beta-1,3/1,6-D-glucan. *Nutrition Journal* 2014;13:38.doi:10.1186/1475-2891-13-38.
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- 6 Samuelsen AB, Schrezenmeir J, Knutsen SH. Effects of orally administered yeast-derived beta-glucans: a review. *Molecular Nutrition and Food Research* 2014;58:183-193.
- 7 Vetvicka V, Oliveira C. Beta(1,3)/(1,6)-D-glucans modulate immune status and blood glucose levels in dogs. *British Journal of Pharmaceutical Research* 2014;4(8):981-991.
- 8 Bauer J. Therapeutic use of fish oils in companion animals. *Journal of the American Veterinary Medical Association* 2011;239(11):1441-1451.
- 9 Wintergerst ES, Maggini S, Hornig DH. Contribution of selected vitamins and trace elements to immune function. *Annals of Nutrition and Metabolism* 2007;51(4):301-323.
- 10 Tizard I. Secondary immunological defects. In: *Veterinary Immunology, An Introduction*. 8th ed. Saunders Elsevier, 2009;487.
- 11 Verbrugge A, Janssens GPJ, Rochus K. Beta-1,3/1,6-glucans down-regulate whole blood NFkappaB and IL-1beta mRNA expression and alveolar bone loss in feline periodontal disease. *Proc. 16th Congress of the ESVCN*. September 13-15, 2012.



DIRECTIONS FOR USE:

Sprinkle contents of packet directly onto cat's food once daily. Administer to cats 6 weeks of age and older as directed by your veterinarian.

ALSO AVAILABLE:

- Imuquin® for Dog and Puppy



CAT

FORMULATED TO PROVIDE IMMUNE SUPPORT TO CATS OF ALL AGES

with Beta (1,3)/(1,6) Glucan



946 Quality Drive • Lancaster, SC 29720
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imuquin.com

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BETA GLUCAN MODE OF ACTION



Contains NMX580™, a proprietary blend of oral Beta (1,3)/(1,6) Glucan and marine lipids. Formulated to provide immune health support to cats 6 weeks and older.

A HEALTHY IMMUNE SYSTEM IS ESSENTIAL TO LIFE

THE IMMUNE SYSTEM

The immune system is a cat's defense against assaults by infectious organisms—bacteria, viruses, fungi, and parasites. This system is a complicated organization of multiple interlinked defense mechanisms made up of organs, various cells, and many molecules working together to help ensure freedom from disease.

CAUSES OF IMMUNE SYSTEM BREAKDOWN ARE MANY^{1,2}

- Physical or psychological stress
 - Animal shelters, new home, multi-cat household, travel and boarding
- Aging—immunosenescence
- Underlying illness or metabolic disease
- Malnourishment
- Failure of maternal protection
- Inadequate vaccination history
- Exposure to environmental toxins
- Vitamin/mineral deficiencies

BETA (1,3)/(1,6) GLUCAN

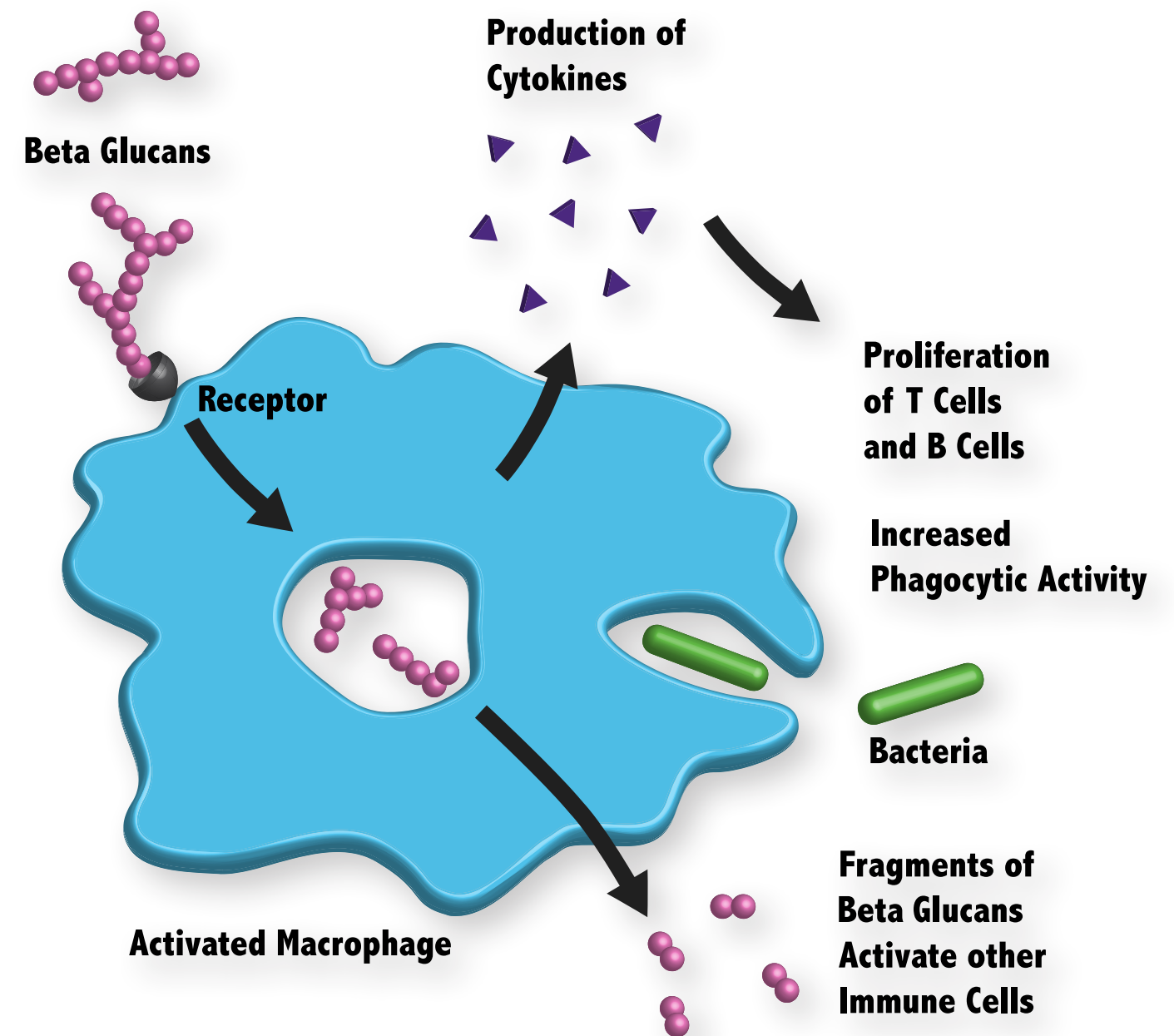
- Beta glucans are polysaccharides, chains of linked glucose molecules found in cell membranes of yeast, molds, mushrooms, and cereal grains³, and vary in biological activity depending on configuration of bonds.
- Beta (1,3)/(1,6) Glucan is extracted from the cell wall of *Saccharomyces cerevisiae* (brewer's yeast)⁴ and is linked at 1,3 carbons with branched 1,6 side chains. Specific architecture gives the yeast-derived beta glucan molecule desirable biological activity.⁵
- Beta glucan functions as an immunomodulator to support normal immune system function.^{6,7}

MARINE LIPIDS

- Supplemental source of omega-3 fatty acids, including EPA and DHA.
- DHA is important for normal development of the eyes and nervous system.
- Help maintain organ and tissue functions, including immune function and a healthy inflammatory response.⁸

VITAMINS AND MINERALS

- Adequate intake of vitamins and minerals is required for the immune system to function efficiently.⁹
 - Supplemental Vitamin E may act as a significant stimulus of immunity.¹⁰
 - Vitamins A and D play important roles in cell mediated immunity and humoral antibody response.⁹



BETA (1,3)/(1,6) GLUCAN USE IN CATS¹¹

Beta (1,3)/(1,6) Glucan has been shown in research to be beneficial in cats. Thirty cats with naturally occurring gingival and/or early periodontal conditions, as a model of a chronic inflammatory process, were administered the beta glucan found in Imuquin® Cat or a placebo for 16 weeks. Serum cytokine levels and whole blood cytokine and nuclear factor-kappaB (NF-kappaB) mRNA expression were measured at day 0 and at 4 and 16 weeks. Beta glucan had a modulating effect

as evidenced by decreased mRNA expression of interleukin-1 β and NF-kappaB. Interestingly, alveolar bone loss evaluated radiographically was also found to be decreased in cats administered beta-glucan. Researchers concluded that while further research is needed to understand mechanism of action, this was the first study supporting the use of Beta (1,3)/(1,6) Glucan in cats with a chronic inflammatory process.