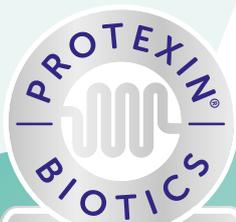


Protexin[®]
VETERINARY

Smarter pet care, powered by biotics.

Pro-Kolin Enterogenic for Dogs & Cats

For ongoing digestive and
gut health support.



GOOD GUT HEALTH

- ✓ PREBIOTICS
- ✓ PROBIOTICS
- ✓ POSTBIOTICS

Protexin Biotics®

Our Protexin Biotics have been expertly developed to support a healthy microbiome, essential for the normal functioning of the gastrointestinal tract and rest of the body.

Probiotics

Probiotics are live microorganisms shown to support the microbiome.

Probiotics promote a healthy microbiome and support gut health.^{1,2,3} The mode of action can vary between different probiotic strains.^{4,5-11}

Possible modes of action include competitive exclusion,^{12,13} mucosal barrier support,^{1,4,5} short-chain fatty acid (SCFA) production^{4,14,15} and immune stimulation.^{1,4,5,16}

Enterococcus faecium

Pro-Kolin Enterogenic contains the strain *Enterococcus faecium* (PXN-33). The *Enterococcus faecium* in Pro-Kolin Enterogenic has been shown to survive exposure to a low pH, intended to mimic the acidic stomach environment.¹⁷

Prebiotics

Prebiotics selectively feed beneficial bacteria, supporting a diverse and healthy microbiome.

Prebiotics resist being broken down by the host; instead they reach the distal intestine where they are fermented by beneficial bacteria^{18,19} to produce SCFAs which have been shown to provide many health benefits in humans.^{8,9}

Fibersol

Fibersol is a resistant maltodextrin which bypasses enzymatic digestion to act as a prebiotic for bacteria within the intestines.^{17,20} Fibersol has been shown to support levels of the beneficial bacteria *Bifidobacteria* spp.,^{20,21} it is slowly fermented and therefore produces SCFAs over a prolonged period, supporting the microbiome for a longer duration. SCFAs constitute the primary energy source for colonocytes and are important metabolites for the maintenance of intestinal health.^{8,9}





🐾 Postbiotics

Postbiotics are inactivated microorganisms which remain bioactive in the gut, providing health benefits.

🐾 Inactivated *Bifidobacterium animalis* ssp. *lactis* CECT 8145

Inactivated *Bifidobacterium animalis* ssp. *lactis* CECT 8145 has been shown to modulate gut health and increase production of the SCFA propionate in dogs.²²



🐾 Immune support

🐾 Safmannan

Safmannan is purified from cell walls of the yeast *Saccharomyces cerevisiae* to provide a source of mannan-oligosaccharide (MOS) and beta-glucans, both of which have immunomodulatory properties in dogs.²³⁻²⁷

🐾 Mannan-oligosaccharide

Mannan-oligosaccharide is a prebiotic which, as well as being fermented by the microbiome to produce SCFAs, is able to bind to fimbriae on certain bacteria, including *E. coli* and *Salmonella* spp., thereby reducing their adhesive properties.^{28,29} MOS, when given for 10 days, has been shown to reduce faecal shedding of *E. coli*.³⁰

🐾 Beta-glucans

Beta-glucans, specifically those with 1,3/1,6 linkage in their chemical structure, have been shown to stimulate the innate immune system in dogs. Some immune cells, such as macrophages, have dectin-1 receptors that recognise and may respond to beta-1,3/1,6-glucans resulting in the observed stimulation of the innate immune system.^{24,25}

Key ingredients

The ingredients in Pro-Kolin Enterogenic act to support intestinal health,^{1,2,3,31,32} modulate the immune system,^{4,23-25,31,33,34} stabilise the microbiome^{2,3,32} and support normal cobalamin levels.³⁵⁻³⁹ This provides gastrointestinal support. Pro-Kolin Enterogenic is intended to be used long term to support dogs and cats as they enjoy a happy, healthy life.

Cobalamin

Cobalamin plays an important role in many physiological processes in the body.⁴⁰⁻⁴⁶ Clinical studies have demonstrated that oral supplementation of cobalamin, at sufficient levels, is comparable to parenteral administration at supporting normal cobalamin levels effectively in dogs.^{35,37,39,47} Each 4g sachet of Pro-Kolin Enterogenic provides 0.5mg cyanocobalamin (vitamin B12) in order to support normal cobalamin levels.⁴⁷

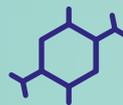
Mucus layer support

L-threonine

L-threonine is the amino acid most utilised by highly metabolic enterocytes.³¹ It is believed to be important for the production of mucosal and secretory glycoproteins which form the protective mucus layer lining the gut epithelium. The mucus layer ensures gut barrier function and secretory mucins support intestinal immunity.^{31,34,48}

N-acetyl D-glucosamine

N-acetyl D-glucosamine is a glycosaminoglycan (GAG) precursor⁴⁹ which supports biosynthesis of epithelial GAGs within the mucin layer.⁵⁰⁻⁵²



Binder

Bentonite

Bentonite is a binding clay which absorbs water and has adsorptive properties (compounds such as toxins may bind to the clay).⁵³⁻⁵⁸

Flavouring

Pro-Kolin Enterogenic has an artificial chicken flavouring to aid palatability; this contains no meat proteins.

Ingredients

Each 4g sachet contains:



Enterococcus faecium (PXN-33) – 1×10^9 CFU



Fibersol-2



Inactivated *Bifidobacterium animalis ssp. lactis* BPL-1 CECT 8145 – 5×10^9 cells



Yeast cell wall (source of mannan-oligosaccharide and beta-glucans)



Vitamin B12 (cyanocobalamin)



L-threonine



N-acetyl D-glucosamine



Bentonite

Instructions for use

Add to the daily food, according to the table below, for as long as considered necessary.

Daily amount:

Weight	Sachets per day
<5kg	1/2
5-15kg	1
15-35kg	2
>35kg	3

Available in boxes of 30 sachets. Simultaneous use alongside oral macrolides should be avoided.





For information on our full range of products for dogs, cats and rabbits, please visit our website.

For references please visit protexinvet.com/pke-refs or scan

