



NEW

# Cobalaplex

For Dogs and Cats

Oral cobalamin  
(vitamin B12)  
supplementation

**Protexin**<sup>®</sup>  
veterinary ●●●

# Cobalaplex



Cobalaplex has been designed to help support normal serum cobalamin (vitamin B12) and folate (vitamin B9) levels in dogs and cats, helping them to enjoy a happy, healthy life.

## Cobalamin (vitamin B12)

Cobalamin is a water-soluble vitamin that plays an important role in many physiological processes including cellular metabolism, DNA synthesis, amino acid metabolism, fatty acid metabolism and erythrocyte formation.

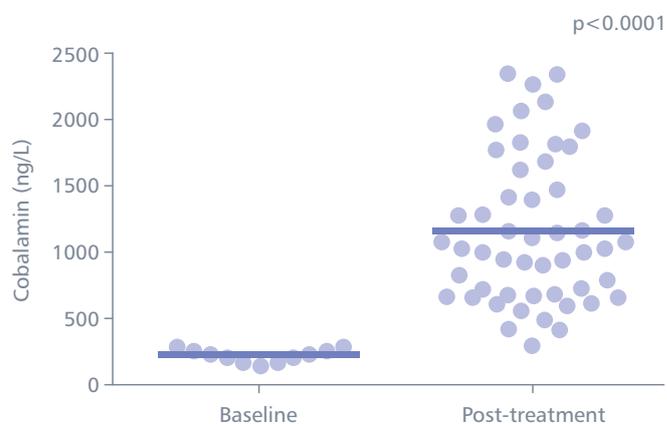
### Oral cobalamin

High dose oral cobalamin supplementation has been shown to normalise serum levels in hypcobalaminemic dogs<sup>3</sup> and cats<sup>4</sup>.

The main source of vitamin B12 for dogs and cats comes from dietary sources involving the formation of cobalamin complexes with gastric and pancreatic intrinsic factors, before finally being absorbed via transport across specialist receptors in the terminal ileum. There are many factors that can contribute to disruptions in this pathway resulting in hypcobalaminemia.

Dogs and cats with hypcobalaminemia often show signs of gastrointestinal disturbances although it can be difficult to distinguish if this is a cause or effect of the deficiency<sup>1</sup>.

Historically, veterinary surgeons have been advised to supplement parentally in all cases of hypcobalaminemia<sup>2</sup>. Cobalaplex contains high levels of cobalamin to support the maintenance of normal cobalamin serum levels, as hyper-supplementation has been shown to aid an absorption mechanism independent of intrinsic factor<sup>3</sup>.

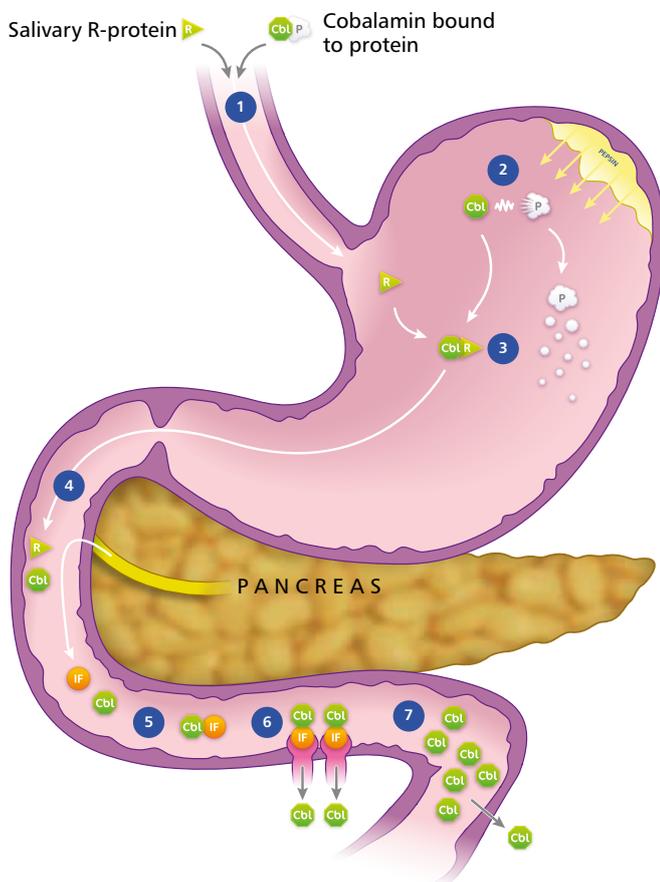


Results from a 2016 study showing the effects of oral cobalamin supplementation in 51 dogs diagnosed with hypcobalaminemia<sup>3</sup>. The mean value is represented by the blue horizontal line.





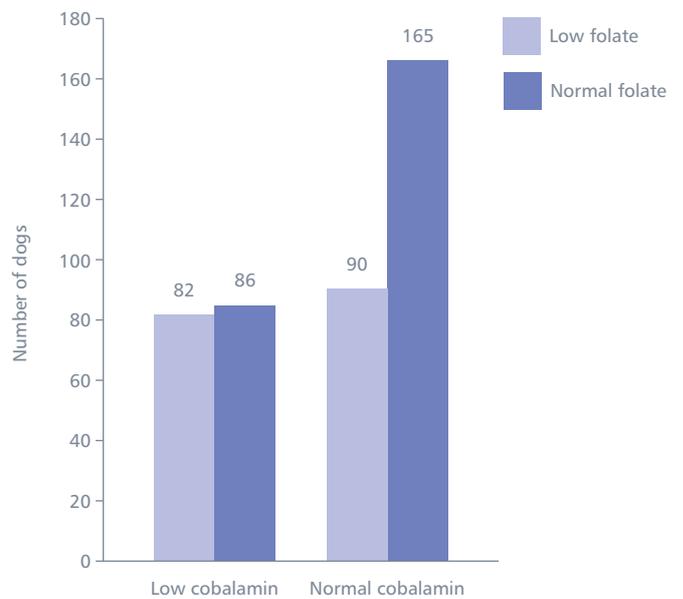
## Absorption of cobalamin



- 1 Ingestion of cobalamin bound to protein and production of salivary R-protein.
- 2 Gastric pepsin breaks cobalamin-protein bond, allowing digestion of protein and release of cobalamin.
- 3 Cobalamin binds to R-protein.
- 4 R-protein-cobalamin complex is broken down by protease enzymes.
- 5 Cobalamin binds to intrinsic factor produced by the pancreas.
- 6 Uptake of cobalamin via the cobalamin-intrinsic factor receptors in the ileum.
- 7 When intra-luminal levels of cobalamin are very high, cobalamin can be absorbed by separate pathways independent of the intrinsic factor receptors.

## i Hypofolataemia

In a recent study, 49% of hypocobalaminemic dogs were also found to have concurrent subnormal serum folate concentrations <sup>6</sup>.



Results from a 2017 study showing the prevalence of concurrent hypocobalaminemia (serum cobalamin concentration <251 ng/L; reference interval [RI] 251–908 ng/L) and hypofolataemia (serum folate concentration <7.7 µg/L; [RI] 7.7–24.4 µg/L) in a sample of 423 dogs<sup>6</sup>.

## Oral cobalamin supplementation for dogs and cats



### Folic acid (vitamin B9)

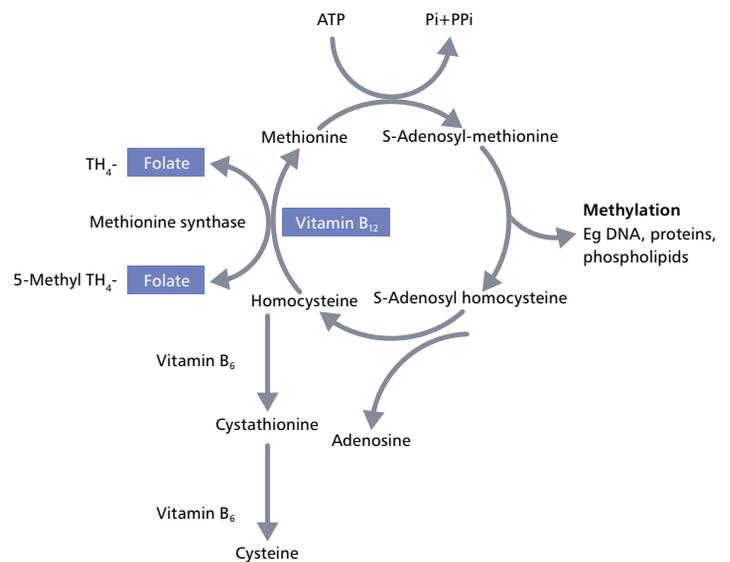
Folic acid is a synthetic form of folate, another important water-soluble B vitamin that is essential for DNA synthesis and repair thus playing a key role in cell division and growth. As a result, proliferating cells such as erythrocytes, leukocytes and enterocytes have a high requirement for folic acid.

The majority of a dog and cat's daily folic acid requirement is obtained from their diet and absorbed in the proximal small intestine. However, certain intestinal bacterial populations are also able to produce folic acid, thus a gastrointestinal dysbiosis can affect serum folate levels<sup>5</sup>.



### The synergistic relationship between cobalamin and folic acid

Folate and cobalamin have a synergistic relationship and are cofactors in several important cellular metabolic processes. One of these processes is the metabolic pathway that converts the amino acid methionine to cysteine – a necessary step in the production of glutathione, an essential antioxidant.



If there is a deficiency of either one of these vitamins then this pathway is interrupted resulting in elevated serum levels of homocysteine (hyperhomocysteinaemia) and disturbances in the methionine metabolic pathway<sup>6</sup>.



# Cobalaplex



## Preplex® prebiotics

Disruptions to the intestinal microbiota population can cause a dysbiosis. This can result in an imbalance of serum folate and cobalamin via several mechanisms, including the following:

- Overgrowth of folate-producing bacteria can impact serum folate levels which can potentially 'mask' concurrent low serum cobalamin levels<sup>7</sup>.
- Certain intestinal bacteria species also utilise dietary cobalamin and thus an overgrowth of these bacterial populations leads to competitive uptake of cobalamin. This in turn reduces the amount of cobalamin available to the animal and may lead to a decrease in serum cobalamin levels<sup>5</sup>.

Cobalaplex contains Preplex® prebiotic – a 50:50 combination of fructo-oligosaccharide (FOS) and acacia (gum arabic). FOS has a simple structure and is therefore rapidly fermented whereas acacia has a more complex structure and is fermented more slowly.

This combination provides a prebiotic effect along a greater length of the intestinal tract, helping to support a healthy gastrointestinal microbiota and thus aiding the maintenance of optimum serum folate and cobalamin levels.



# Cobalaplex

Supporting normal serum cobalamin and folate levels in dogs and cats.

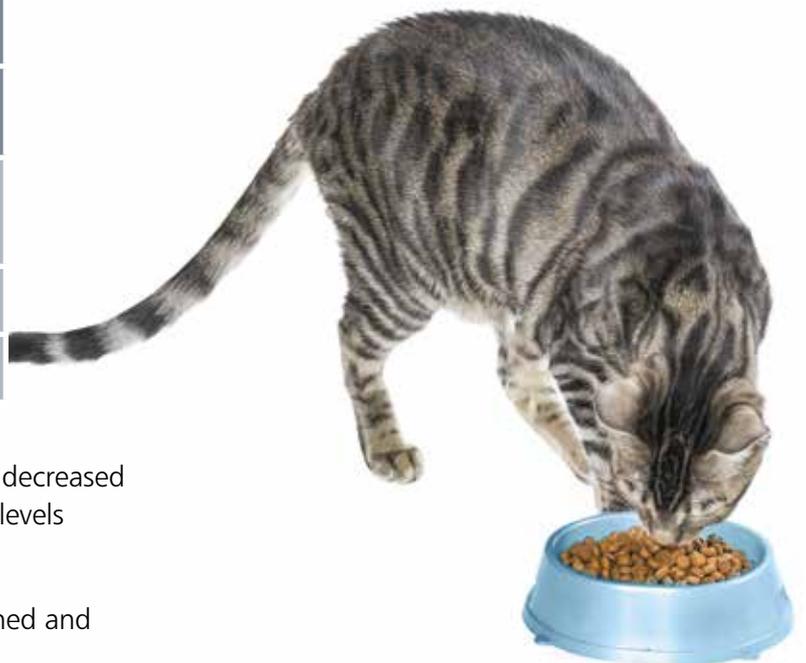
Each capsule contains:

- 0.5mg cyanocobalamin (vitamin B12)
- 0.2mg folic acid (vitamin B9)
- Preplex® prebiotics
- Artificial chicken flavour

## Directions for use

	 
Weight (kg)	Number of capsules
<10kg	½ capsule per day or 1 capsule every other day
10-20kg	1 capsule daily
>20kg	2 capsules daily

- The number of capsules can be increased or decreased to maintain normal cobalamin (vitamin B12) levels
- For use in dogs and cats
- Capsules can be administered whole or opened and sprinkled onto food



### References

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3. Toresson L, Steiner JM, Suchodolski JS, Spillmann T. Oral cobalamin supplementation in dogs with chronic enteropathies and hypocobalaminemia. *J Vet Intern Med* 2016; **30**: 101-107.
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7. Aslinia F, Mazza JJ, Yale SH. Megaloblastic anemia and other causes of macrocytosis. *Clin Med Res* 2006; **4**: 236-241.



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