GASTROINTESTINAL

Protexin® VETERINARY | Smarter pet care, powered by biotics.

Cobalazorb for Dogs & Cats

Oral cobalamin (vitamin B12) supplementation.

PROTEXIN® BIOTICS
GOOD GUT HEALTH
✔ PREBIOTICS

CLINICALLY PROVEN

Cobalazorb has been shown in a clinical trial to support normal serum cobalamin (vitamin B12) levels in dogs.[1] Providing cobalamin (vitamin B12), folic acid (vitamin B9) and microbiome support, Cobalazorb helps dogs and cats to enjoy a happy, healthy life.

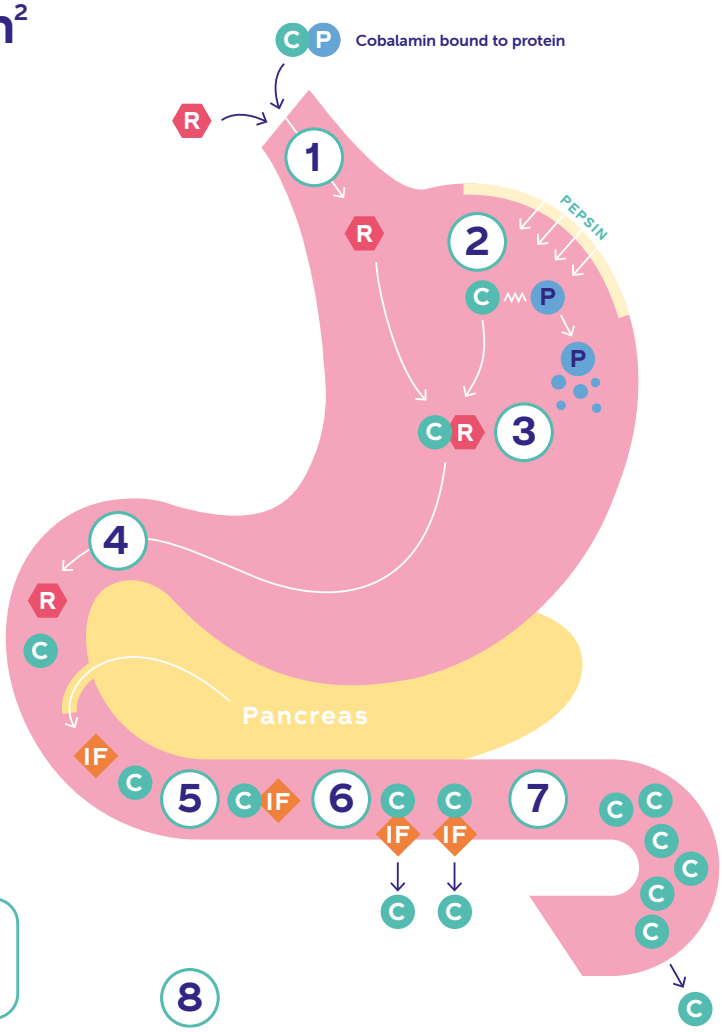
Cobalamin (vitamin B12)

Cobalamin is a water-soluble vitamin that acts as a cofactor for two essential enzymatic reactions within the body.[2,3] It therefore plays an important role in many physiological processes including cellular metabolism,[4] DNA synthesis,[3,5] amino acid metabolism,[3] fatty acid metabolism,[3] erythrocyte formation[5] and neurological function.[5]

Dogs and cats, like humans, are unable to synthesise cobalamin, so they rely on dietary intake to maintain adequate levels.[6] Following ingestion, dietary cobalamin is primarily absorbed via a complex receptor-mediated pathway (see 'Absorption of cobalamin').[2] Changes to this pathway can occur due to various factors, leading to cobalamin deficiency.[2,7-11]

Absorption of cobalamin[2]

1. Ingestion of cobalamin bound to protein and production of salivary R-protein.
2. Gastric acid and pepsinogens break the cobalamin-protein bond, allowing digestion of the protein and release of cobalamin.
3. Cobalamin binds to R-protein and enters duodenum.
4. R-protein-cobalamin complex is broken down by protease enzymes.
5. Cobalamin binds to intrinsic factor, often produced by the pancreas, depending on the species.
6. Uptake of cobalamin via the cobalamin-intrinsic factor receptors in the ileum.
7. It has been shown that approximately 1% of oral cobalamin is absorbed by passive diffusion, independent of the intrinsic factor receptors.[12-14]
8. Cobalamin is stored in the liver with any excess passed out in the urine.[14-16]

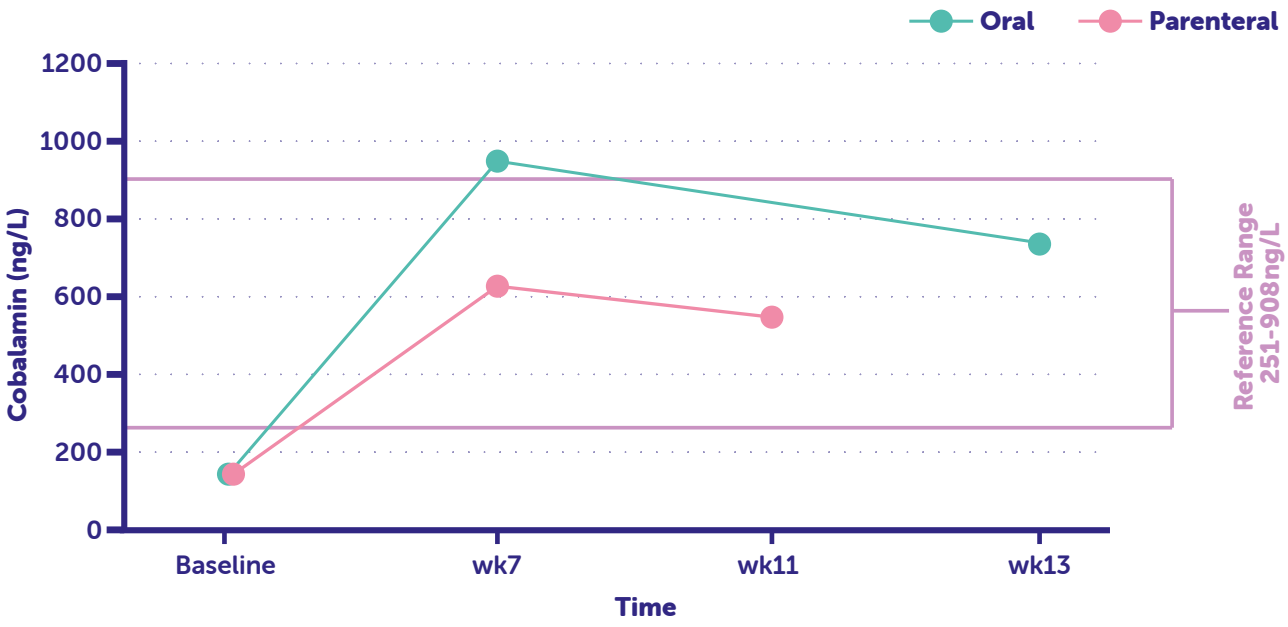


R Salivary R-protein · C Cobalamin · P Protein · IF Cobalamin-intrinsic factor

Oral cobalamin

High-level oral cobalamin supplementation has been shown to support serum levels in dogs[1,17-23] and cats[19] with cobalamin deficiency.

Historically, it was thought that cobalamin supplementation would only be sufficient if given parenterally in order to bypass the complicated intrinsic factor-mediated absorption pathway shown above,[2,24] however, clinical studies have now demonstrated that oral supplementation with high levels of cobalamin is comparable to parenteral administration at supporting normal cobalamin levels effectively.[1,17-20] The mechanism of absorption appears to be independent of intrinsic factor.[21-23] Cobalazorb has been shown in a clinical trial to be as effective as parenteral cobalamin in supporting normal cobalamin levels in dogs with cobalamin deficiency.[1] Furthermore, in dogs with the lowest serum cobalamin levels (<200ng/L) at the start of the study, owner adherence and satisfaction was significantly higher in dogs taking Cobalazorb compared to those receiving parenteral supplementation.[1]



Chang *et al*. carried out a prospective, randomised study comparing the efficacy of oral versus parenteral cobalamin in 46 dogs with cobalamin deficiency.[20] They found oral cobalamin to be a suitable alternative to parenteral supplementation to support normal serum cobalamin levels.

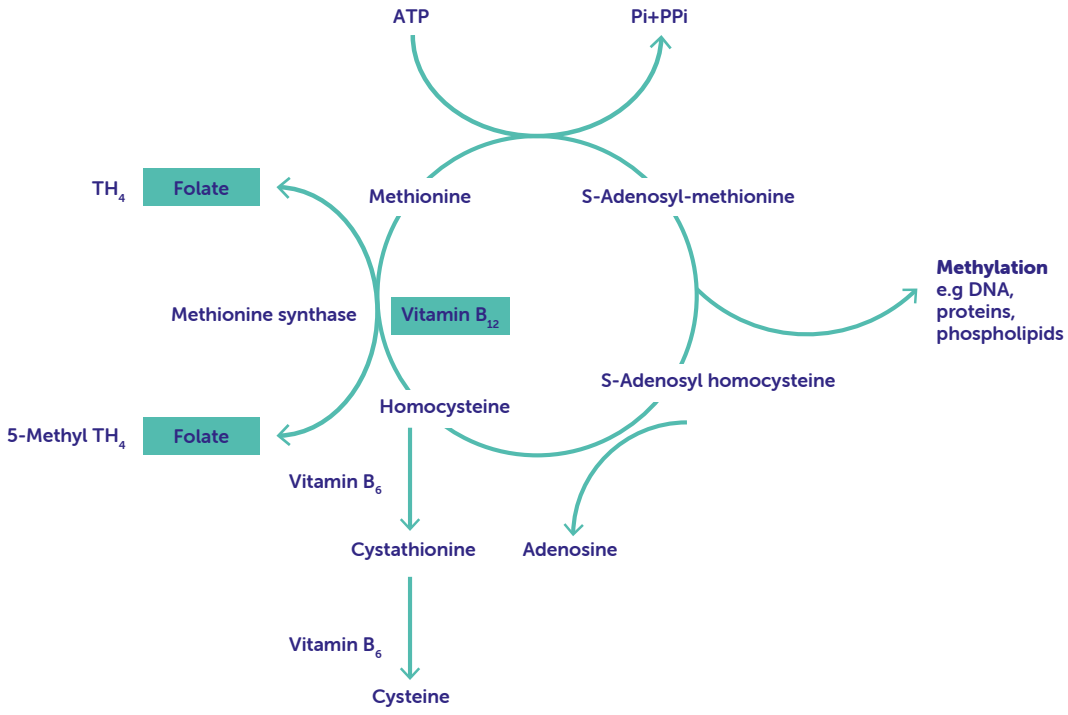
Folic acid (vitamin B9)

Folic acid is a synthetic form of folate, another important water-soluble B vitamin. It is essential for DNA synthesis and repair, playing a key role in cell division and growth.[25,26] As a result, proliferating cells such as erythrocytes, lymphocytes, granulocytes and enterocytes have a high requirement for folate.[27-30]

The majority of a dog or cat's daily folate requirement is obtained from their diet and absorbed in the duodenum and jejunum.[31,32] However, certain intestinal bacterial populations are also able to produce folate, thus the gut flora can affect serum folate levels.[32-34]

The synergistic relationship between cobalamin and folic acid

Folate and cobalamin have a closely integrated relationship, both acting as cofactors to methionine synthase within the methionine cycle (as shown in the image below). This metabolic cycle is important for the production of DNA and proteins as well as the essential antioxidant glutathione.[35-37] Both these vitamins are fundamental to the activity of methionine synthase needed for the normal function of the whole methionine cycle.[35,38]



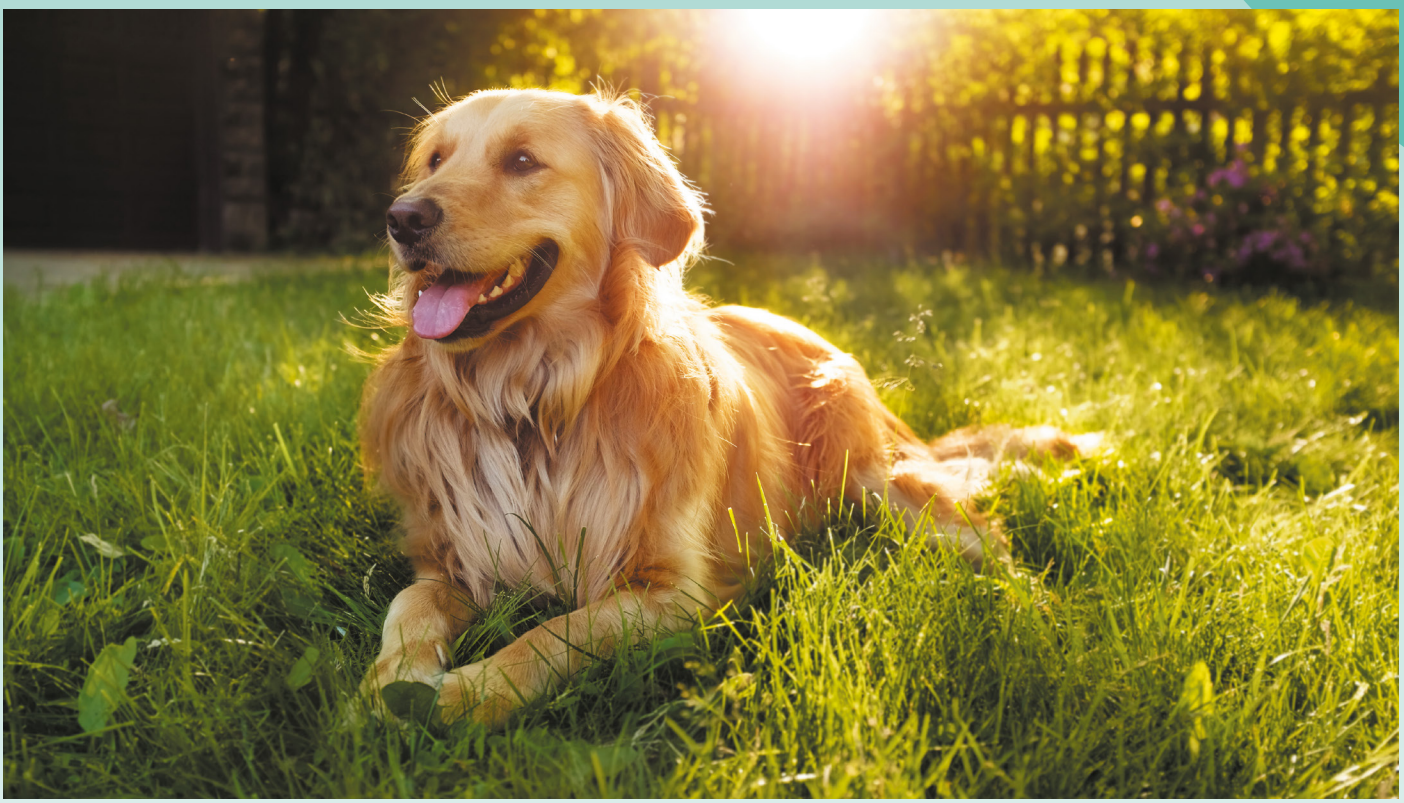
39-42

Influence of the microbiome on cobalamin and folate status

The intestinal microbiota can affect serum folate and cobalamin levels via several mechanisms, including:

Altered bacterial populations may result in increased ability of the microbiota to synthesise folate.[33,43]

Certain intestinal bacteria species also utilise dietary cobalamin. A well-balanced microbiota supports this bacteria's uptake of cobalamin to remain at healthy levels.[33,34]



Protexin® Biotics

Our Protexin Biotics have been expertly developed to support a healthy microbiome. The microbiome is essential for the normal functioning of the gastrointestinal tract and for the gut's interaction with the rest of the body. Our Protexin Biotics help support the natural balance in the animal's gut and keep them at their best.

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[44] to produce short-chain fatty acids which have been shown to provide many health benefits in humans.[45,46]

Preplex®

Preplex prebiotic is a combination of oligofructose (also known as fructo-oligosaccharide, FOS) and acacia (gum arabic). Oligofructose is a short-chain molecule. Generally, short-chain molecules are fermented fairly rapidly, whereas longer-chain structures, like acacia, would be expected to undergo slower fermentation.[44] This combination supports the growth of beneficial bacteria throughout the colon.[47-49]

Cobalazorb

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

Each capsule contains:

- 0.5mg cyanocobalamin (PXN-B12)
- 0.2mg folic acid (vitamin B9)
- Preplex® prebiotics
- Artificial chicken flavour to aid palatability (contains no meat proteins, so suitable for animals with known meat allergies).

Instructions for use

The number of capsules can be increased or decreased to maintain normal cobalamin (vitamin B12) levels.

- For use in dogs and cats
- Capsules are opened and the contents sprinkled onto food

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

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Smarter pet care, powered by biotics.

GASTROINTESTINAL | URINARY | HEPATIC

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

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

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