ProtectaCell®

Fatty acid and antioxidant formula for dogs and cats

"Surf & Turf" chewable tablets

Indications:

Nutritional support for the immune system in animals predisposed to, diagnosed with, or recovering from cancer or heart disease, especially as anadjunct to conventional therapies.

Main ingredients:

Algae Meal (source of Omega-3 Fatty Acids), L-Arginine, Decaffeinated Green Tea Extract (40% EGCG), *Silybum marianum* Phosphatidylcholine Complex, Grape Seed Extract, N-acetyl Cysteine, Coenzyme Q10, Vitamin E Succinate, Vegetarian Beef Flavor

Inflammation and excessive oxidative damage can lead to genetic mutations in susceptible cells. Micronutrients found in ProtectaCell have been shown to reduce inflammation and oxidative damage, and are intended to preserve the genetic integrity of cells, provide nourishment, and improve the immune system's response to conventional cancer therapy. Nutritional therapy is most effective when started early, before carbohydrate and protein stores are depleted, and may support healthy metabolism even once the animal is in remission. Research has shown thatalterations in the metabolism of carbohydrates, proteins and fat do not normalize after surgical elimination of the disease.

Supplemental omega-3 fatty acids are important for several reasons. High amounts of hormones and enzymes are produced during the transformation of normal cells into cancer cells. As a result, fatty acidsin the cell membranes are replaced with cholesterol, which is resistant to attack by the immune system. Omega-3 fatty acids can prevent and help resolve inflammation, reduce many metabolic abnormalities, inhibit enzymes necessary for cancer to spread, and reduce secretion of the cytokines TNF-α(tumor necrosis factor-α), IL-1β(interleukin-1β), IL-1α, and IL-2, which promote tumor growth. Animal studies also suggest that omega-3 fatty acids inhibit cachexia (weight loss), which is significant because one way that cancer kills is by starving the pet.

In addition, coenzyme Q-10 and vitamin E are important fat-soluble antioxidants for supporting the immune system and protecting against lipid peroxidation. Vitamin E may enhance the growth-inhibitory effect of some treatments. Coenzyme Q-10 may reduce or prevent drug-induced toxicity in the heart and prevent decreases in heart function,both of which may result from some treatments, such as the drug doxorubicin.

The highly bioavailable extracts of grape seed, green tea, and silymarin (*Silybum marianum*) found in ProtectaCell further contribute to protecting the heart as well as other organs. Grape seed extract may interfere with cancer growth by strengthening cell membranes against damaging enzymes and by contributing to the increase of collagen in tissues surrounding cancer cells. Green tea and silymarin have both been shown to interfere with tumor growth and studies support each as adjunctive treatment to traditional therapy.

The amino acid L-arginine and amino acid derivative n-acetyl cysteine (NAC) complete the synergistic blend of nutrients in ProtectaCell. L-arginine has been found to be significantly reduced in the blood of cancer patients. It may enhance immune function and help to decrease the growth and spread of tumors. NAC is a freeradical scavenger and also inhibits the cytokine IL-6 and reduces TNF-α.

Coenzyme Q10, omega-3 fatty acids, and antioxidants have also been used as nutritional support in dogs and cats with heart diseases, such as cardiomyopathy, valvular heart disease and congestive heart failure. Therefore, in addition to supporting the heart after exposure to certain treatments, ProtectaCell may also be beneficial for pets with heart disease unrelated to cancer.

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Q: What if an animal is undergoing chemotherapy or radiation therapy?

A: We recommend temporarily discontinuing use of ProtectaCell 24 hours before, during, and 24 hours after chemotherapy or radiation therapy. However, research on multiple dietary antioxidants suggests that for optimum benefit, a minimum total usage time of 1-2 days is needed prior to therapy (i.e. prior to temporary discontinuation of supplement).

Q: Why is the green tea extract decaffeinated?

A: In human studies, catechins (a component of green tea) in combination with caffeine have been shown to increase metabolic rate by 4%. We use decaffeinated green tea in order to avoid any potential weight loss inaddition to that which may already have occurred as a result of disease.

Q: Why is the silymarin bound to phosphatidylcholine?

A: We use a standardized extract of silymarin, a polyphenolic flavonoid isolated from the seeds of milk thistle (*Silybum marianum*). The silymarin is complexed with phosphatidylcholine forimproved bioavailability, of silibinin especially, which is the main active constituent of silymarin.

Q: What is the source of omega-3 fatty acids in ProtectaCell?

A: The omega-3 fatty acids come from algae grown in a controlled environment.

Q: If using ProtectaCell as a dietary supplement in healthy pets, can the recommended usage be lowered?

A: Yes, the usage can be reduced to half for healthy animals.

Q: What if a pet has side effects?

A: If diarrhea or vomiting occurs concurrently with starting ProtectaCell administration, it is recommended that the usage is reduced to half for about a week before returning to the full amount. Mixing supplements with food has also been helpful in some cases. Diarrhea and vomiting may also be side effects of chemotherapy and radiation therapy.

Supporting Literature:

1. Ogilvie G. Nutritional approaches to cancer therapy, in Complementary and Alternative Veterinary Medicine (Schoen AM., Wynn SG., ed.), St. Louis, MO, Mosby, Inc., pp. 93-111, 1998.
2. Messonnier S. The Natural Vet's Guide to Preventing and Treating Cancer in Dogs. 1st ed. Novato, CA, New World Library; 2006.
3. Prasad K. Multiple dietary antioxidants enhance the efficacy of standard and experimental cancer therapies and decrease their toxicity. Integr. Cancer Ther. 2004;3(4):310-322.
4. Greenlee H, Abascal K, Yarnell E, Ladas E. Clinical applications of Silybum marianum inoncology. Integr. Cancer Ther. 2007;6(2):158-165.
5. Serhan CN, Yacoubian S, Yang R. Anti-inflammatory and proresolving lipid mediators. Annu. Rev. Pathol. Mech. Dis. 2008;3:279-312.