

Veterinary compounding can create dosage forms that are just the right dose for a given animal. Compounding can also formulate multiple medications within one pill, cream or solution for pets with varied medical symptoms. The goal of veterinary compounding is to enhance the ability to treat animal patients in a more effective manner. Overall, specially-made prescriptions can improve compliance, maximize the potential for therapeutic success, and reduce the overall cost of animal care.

## Urge-Control

**Ingredients:** Aminopentamide Hydrogen Sulfate

**Description:** Aminopentamide hydrogen sulfate is used to treat vomiting, diarrhea, visceral spasm, pylorospasm, or hypertrophic gastritis in dogs and cats. The antispasmodic properties of aminopentamide hydrogen sulfate may help control “urgency” and discomfort associated with anorectal disease.

## Better Stomach

**Ingredients:** Cisapride

**Description:** Cisapride has been used widely to treat gastric-emptying disorders, intestinal transit and other motility-disorders in both dogs and cats. It accelerates emptying the stomach and propulsion of food through the intestines by increasing peristalsis. Cisapride is used in cats to manage chronic constipation and megacolon.

## DES Care

**Ingredients:** Diethylstilbestrol (DES)

**Description:** Diethylstilbestrol (DES) is a synthetic estrogen. DES is used primarily to treat urinary incontinence in spayed females. Estrogens increase urethral tone and help to prevent leaking or dribbling of urine. DES usually is effective for this purpose and the risk of side effects is relatively low due to the small dose.

## Thyroid Relief

**Ingredients:** Methimazole

**Description:** Methimazole is a human drug, used for the medical management for hyperthyroidism. Methimazole inhibits the synthesis of thyroid hormones by interfering with metabolic steps involving iodine incorporation and the formation of iodothyronine.

## Metro-biotic

**Ingredients:** Metronidazole

**Description:** Metronidazole is used to treat protozoal infections in dogs and cats. It also is used to treat anaerobic bacterial infections. Metronidazole has immune-modulating activity and may be prescribed to treat inflammatory bowel disease. Metronidazole may be used with corticosteroids to treat inflammatory bowel disease or gum disease in cats. Topical metronidazole gel is used to treat skin infections, such as feline chin acne. "Various salts of metronidazole with improved palatability are now available for veterinary patients... Cats and birds accept the benzoate salt much more willingly than they accept metronidazole HCl and do not seem to be stressed by its administration."

**Reference:**

*Compendium* Dec. 2000: 22(12); pp. 1104, 1105, 1107, 1130

## PDH Relief

**Ingredients:** Trilostane

**Description:** Pituitary-dependant hyperadrenocorticism (PDH) is the most- common cause of Cushing's Disease seen in dogs. About 85% of dogs with Cushing's Disease have PDH. It is a disease of middle-aged dogs. Trilostane is a very promising drug to treat both PDH and to treat adrenocortical tumors. Treatment with trilostane results in reduction of both cortisol and aldosterone.

**Reference:**

Washington State University, College of Veterinary Medicine, Cushings Disease

## Stop the Cough

**Ingredients:** Dextromethorphan Hydrobromide 15mg/ml, Guaifenesin 100mg/5ml Oral Liquid

**Description:** Expectorant and antitussive providing temporary relief from cough and chest congestion

## Stool Softeners

**Ingredients:** Docusate

**Description:** Docusate (DSS) can be used to assist in the passage of hard or dry faeces that may occur secondary to dehydration or use of opioid analgesics or metoprolol. While capsules hide the bitter taste, they cannot be divided for appropriate dosing in smaller animals. The recommended dose in dogs and cats is 2 mg/kg once daily. For more severe cases, appropriately dosed DSS enemas may offer an alternative to phosphate-solution enemas.

**Reference:**

Merck Veterinary Manual, 8th Edition, pp. 1691

## Doxycycline for Prophylaxis and Treatment of Osteoarthritis in Dogs

**Ingredients:** Doxycycline

**Description:** Prophylactic administration of doxycycline (a tetracycline) has markedly reduced the severity of canine osteoarthritis (OA) in weight-bearing regions of the medial femoral condyle, and therapeutic administration of oral doxycycline has been shown to reduce the severity of articular cartilage breakdown in various animal models of OA. This disease modifying effect is associated with reductions in the levels of active and total collagenase and gelatinase in articular cartilage of the involved joint.

**Reference:**

*Vet Surg* 2001 Mar-Apr;30(2):132-9

*J Rheumatol* 1996 Jan;23(1):137-42

*J Rheumatol Suppl* 1995 Feb;43:149-51

*Vet Clin North Am Small Anim Pract* 1997 Jul;27(4):863-81

*Arthritis Rheum* 1992 Oct;35(10):1150-9

## Oral Ringworm Relief

**Ingredients:** Itraconazole 20mg/mL

**Description:** Itraconazole could be an effective alternative to griseofulvin for therapy of dermatophytosis caused by *Microsporum canis*. Itraconazole has also been used to successfully treat *M. canis* infection of cats and guinea pigs.

**Reference:**

*J Am Vet Med Assoc* 1998;213:993-995

## Azithromycin Tablets

**Ingredients:** Azithromycin

**Description:** Azithromycin is a form of erythromycin with improved action against gram-negative organisms, resistance to acid degradation, improved tissue penetration, and a prolonged elimination half-life. Azithromycin shows potential for use in veterinary medicine, particularly in cats and certain avian and exotic species.

“Lacking the prokinetic action of erythromycin, azithromycin appears to cause fewer GI side effects and is generally well tolerated after oral administration. Cats appear to tolerate the drug particularly well... Animals with a history of arrhythmias should be monitored while receiving the drug. Some reduction in dose may be warranted in patients with hepatic or biliary dysfunction, although no reduction appears necessary in patients with renal dysfunction.” Please consult our compounding pharmacist regarding dosing.

**Reference:**

*Compendium of Continuing Education* 23:3 (March 2001), pp. 242-7

## Social Dominance Aggression Relief

**Ingredients:** Fluoxetine

**Description:** Evidence suggests that social dominance aggression may be modulated by serotonergic mechanisms. Fluoxetine (Prozac®), a specific inhibitor of serotonin reuptake, is a popular human antidepressant which has been used successfully to decrease social aggression in dogs and monkeys.

**Reference:**

*J Am Vet Med Assoc* 1996;209:1585-1587

## Fluoxetine for Urine Spraying in Cats

**Ingredients:** Fluoxetine

**Description:** Administration of fluoxetine hydrochloride for treatment of urine spraying in cats can be expected to considerably reduce the rate of urine marking. Pryor et al. recommend that most cats should be treated more than eight weeks before treatment is withdrawn. Cats that vertically marked a mean of  $> \text{ or } = 3$  times per week were treated for 8 weeks with fluoxetine (1mg/kg PO daily- dosage individualized for each cat by a compounding pharmacy) or fish-flavored liquid placebo. When treatment was discontinued after 8 weeks, the spraying rate of cats that had received treatment varied. The main adverse reaction to the drug was a reduction in food intake, which was observed in 4 of 9 treated cats.

**Reference:**

*J Am Vet Med Assoc* 2001 Dec 1;219(11):1557-61

## Urine Spray Relief and Antipruritic in Cats

**Ingredients:** Cyproheptadine

**Description:** Cats with a diagnosis of territorial urine marking showed great results when treated with behavior modification and the administration of cyproheptadine. This resulted in the immediate arrest of undesirable urine marking. Cyproheptadine administration was adjusted to determine the lowest dosage that effectively maintained the cat's consistent use of the litter box. It is recommended for cyproheptadine administration for at least 1 year before any attempt to withdraw its use. Further studies recommend a dose of 2 mg, orally every 12 hours. This antihistamine, also prescribed for its appetite stimulant effects in cats, has antiandrogenic effects in other species.

**Reference:**

*J Am Vet Med Assoc* 1999 Aug 15;215(4):501-2, 482

*J Am Vet Med Assoc* 1999 Feb 1;214(3):369-71, 351-2

## PDH Treatment in Dogs

**Ingredients:** Selegiline

**Description:** Selegiline is a monoamine oxidase (MAO) inhibitor indicated for use in dogs to control signs associated with canine cognitive dysfunction syndrome and uncomplicated pituitary-dependent hyperadrenocorticism (PDH). The recommended dose for cognitive dysfunction is 0.5 to 1 mg/kg, and for PDH is 1 mg/kg, orally each morning. If no improvement is seen after 2 months, the dose can be increased to the maximum of 2mg/kg/day. "Overall, selegiline is well tolerated... Gastrointestinal disturbances, particularly vomiting and diarrhea, are the most common side effects reported. Diarrhea may resolve when the drug is discontinued or the dose decreased. Other adverse effects include hyperactivity, agitation, restlessness, and insomnia. A dose reduction or discontinuation of therapy also resolves these problems."

**Reference:**

*Compendium* March 2000; 22(3):204-5

## Enalapril for Cardiomyopathy and CHF

**Ingredients:** Enalapril

**Description:** Enalapril maleate is an angiotensin-converting enzyme (ACE) inhibitor labeled to treat mild to severe heart failure in dogs. Research has shown that enalapril in combination with diuretics "produces statistically significant clinical improvement in dogs with advanced heart failure due to mitral regurgitation or dilated cardiomyopathy" and has demonstrated "beneficial hemodynamic and clinical effects of adding enalapril to conventional therapy for dogs with CHF... Dogs treated with enalapril and conventional CHF therapy survived two times as long as did those receiving standard therapy alone."

Enalapril has also "been effective in treating cardiomyopathy and CHF in cats and ferrets, and its effects on blood pressure in horses and camels have been studied." Renal function should be checked before starting enalapril therapy and at least every two months thereafter. The most common side effects are gastrointestinal, but there have been reports of enalapril-induced cough in dogs and a bird. "The recommended dose for enalapril in dogs is 0.5 mg/kg orally every 12 to 24 hours. The dose for cats is: 0.25 to 0.5 mg/kg orally every 12 to 24 hours."

**Reference:**

*Compendium*, Dec. 1999

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## Treatment for Urinary Incontinence in Dogs

**Ingredients:** Diethylstilbestrol (DES)

**Description:** Diethylstilbestrol (DES) has been used to treat estrogen responsive incontinence in spayed female dogs. The use of DES is contraindicated in cats as daily use has resulted in pancreatic, hepatic, and cardiac lesions.

**Dose for dogs:** Initially 0.1-1.0 mg orally daily for 3-5 days, followed by maintenance therapy of approximately 1 mg orally per week. Some animals may require much higher initial dosages to obtain a response. DES can be given orally to female dogs at 0.1-0.3 mg/kg/day for 7-10 days, followed by a similar dose once weekly. Dogs should be maintained at the lowest possible dose because bone marrow suppression can develop when diethylstilbestrol is given in high doses.

**Reference:**

*Veterinary Drug Handbook*, 3rd edition, Donald C. Plumb, ed. pp.193-5, and 508-9

*Handbook of Veterinary Drugs*, 2nd edition, pp. 277-8

*J Small Anim Pract.* 2002 Nov;43(11):493-6.

<http://www.merckvetmanual.com/mvm/index.jsp?cfile=htm/bc/190908.asp>

## Tetracycline/Niacinamide for Dermatology

**Ingredients:** Tetracycline and Niacinamide

**Description:** The combination of tetracycline and niacinamide is being used for a continually expanding list of dermatologic disorders thought to be of immune-mediated origin. Diseases that may be controlled with this combination include discoid lupus erythematosus, pemphigus erythematosus, vesicular cutaneous lupus erythematosus (idiopathic ulcerative dermatosis) in Collies and Shetland Sheepdogs, pemphigus foliaceus, lupoid onychodystrophy, metatarsal fistulae in German Shepherds, sterile panniculitis, sterile granulomatous/pyogranulomatous dermatitis, vasculitis, cutaneous histiocytosis, idiopathic lymphocytic/plasmacytic ear margin dermatitis, and nodular granulomatous episcleral keratitis.

**Reference:**

*The Capsule Report (Small Animal/Exotic Edition)* 21:9, December 2002, reporting on Proceedings of the Friskies Pet Care Symposium 10:01

*J Am Anim Hosp Assoc* 1997 Nov-Dec;33(6):540-3

*J Am Vet Med Assoc* 1992 May 15;200(10):1497-500

## Potassium Bromide for Seizures

**Ingredients:** Potassium Bromide

**Description:** Potassium bromide is frequently helpful in treating refractory seizures in animals. Because potassium bromide is excreted renally, it may also be preferable for use in animals that have developed hepatotoxicity while on other anticonvulsants. We prepare this as a liver flavored solution, which can easily be administered to dogs.

Potassium Bromide is dosed on a weight basis. Maintenance doses range from 20-100 mg/kg body weight/day, and can be given as a single or divided dose, usually at 30-40mg/kg/day as a single dose with food. Due to its long half-life, KBr can take up to four months to reach steady state; therefore, a loading dose may be required if therapeutic blood levels must be reached quickly. The loading dose is 400-600mg/kg body weight and is administered orally over 30 to 60 minutes to avoid vomiting. A loading dose is not necessary if it is possible to keep the animal on other medications (as in a case of emerging hepatotoxicity) until levels of bromide are therapeutic (0.5-1.5 mg/ml), when the other anticonvulsant can be tapered off.

**Reference:**

Mollyann Holland, D.V.M., Oklahoma City, OK. Diplomate, American College of Veterinary Internal Medicine

## Meloxicam for Analgesia in Dogs

**Ingredients:** Meloxicam 0.2mg/mL

**Description:** A clinical trial was conducted to evaluate the safety and efficacy of meloxicam in dogs with chronic osteoarthritis. A scoring system assessed specific lameness, general stiffness, painful rise, exercise intolerance, and behavior, and demonstrated significant reductions in clinical signs of osteoarthritis following 4 weeks of drug therapy. Side effects were minimal in extent and duration. The findings of this investigation suggest that the efficacy, tolerance, and formulation of meloxicam oral suspension make it well suited for the treatment of chronic osteoarthritis in the dog.

**Reference:**

*Can Vet J* 2000 Apr;41(4):296-300