FORMULARY

OF THE

COLORADO STATE UNIVERSITY

VETERINARY TEACHING HOSPITAL

APRIL 2016

COMPILED BY:

Richard C. Allen, R.Ph., DICVP

Charleen Becker, R.Ph.

Paula Morgan, R.Ph. DICVP
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ACKNOWLEDGEMENTS

Dr. Lloyd E. Davis compiled the first Veterinary Teaching Hospital Formulary which was published in September 1975. Although the Formulary has been updated annually since then, the contribution Dr. Davis made through the development of the Formulary has been of tremendous benefit to faculty, students, staff and patients of the VTH.

Appreciation to Stuart Forney for changes of format and appendix additions prior to 2000 and procedures for updating. Appreciation to the VTH faculty for their review and recommendations especially in maintaining accurate dosing information. Students also have contributed significantly over the years with suggested improvements resulting in the Formulary becoming an even more useful tool.

Besides a listing of pharmaceuticals and doses the Formulary also includes:
An updated list of biologicals stocked in the pharmacy.

Normal laboratory values furnished by the VTH Clinical Pathology Lab.

Most current drug withdrawal information for food animals.

A brand and generic drug name index.

(Note - the brand names included are not to imply endorsement of, nor the superiority of, the company's product).
Veterinary Medical Staff and Students:

This Formulary is meant to be a teaching tool, and provide a readily available and practical source of drug information for your use in the James L. Voss Veterinary Teaching Hospital (VTH). Medicines are listed by generic drug names to reduce the number of terms to be learned, and to facilitate an understanding of the relationship of pharmacology to clinical problems. The pharmacology of the various brands of a specific drug is identical, so it is reasonable to teach introductory pharmacology primarily using generic drug names. Realize that even though you will be discussing drugs in Pharmacology using these generic names, you will eventually need to learn trade names for purchasing and administering drugs in your practice. Thus, it is hoped that this compilation will serve as a guide for the student to facilitate an understanding of the relationship between basic knowledge of pharmacology and application of pharmacotherapy to your patients in this hospital.

The VTH Pharmacy stocks only drugs used regularly in significant quantities, and items which might be required for urgent/emergency therapies. Other items can be procured readily from local pharmacies.

We hope you find this formulary helpful in your clinical experience here at the VTH. Do not hesitate to contact my office with your constructive criticism and suggestions for its improvement.

Tim Hackett  DVM; DACVECC

VTH Hospital Director
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Introduction

The Formulary contains a list of pharmaceutical and biological items approved by the Pharmacy and Faculty for routine use in patients treated through the CSU Veterinary Teaching Hospital. Procedures concerning the acquisition of non-Formulary items, the addition of new drugs to the Formulary, as well as deletions of obsolete items are stated in Section I (Hospital Formulary Procedures).

Suggested dosages usually differ between the various sources which include: the manufacturer, veterinary textbooks, journal articles, lecture or symposium notes, clinical experience, etc. Students and faculty should realize that for most drugs there is a dose range and that the dose listed in the Formulary is only provided as a suggested guideline and is not to imply it is "the dose". The dosages listed are those accepted by the VTH faculty and currently being used within the hospital.

An attempt has been made to list dose rates for the various species in mg/kg (mg/lb). However, in some cases the listing will be in terms of dose range or average dose per animal. The latter method is not as desirable but is occasionally the only dosing information available. One tab b.i.d. for a dog refers to an average size (30 lb) dog. A dose range such as 15-30 ml for a cow would mean that 15 ml would be given to a small cow (500-600 lbs) whereas 30 ml would be administered to a large (1000-1200 lbs) one.

Species abbreviations used in the Formulary are:

\[ \begin{align*}
    H &= \text{horse, donkey, pony} \\
    B &= \text{cattle} \\
    LI &= \text{llama} \\
    Sh &= \text{sheep and goats} \\
    Sw &= \text{swine} \\
    D &= \text{dog} \\
    C &= \text{cat}
\end{align*} \]

Other abbreviations are defined in Section V under "Abbreviations Used in Prescription Writing".
DISCLAIMER

The recommendations as to usage, toxicity, dosage and adverse effects herein are provided for the intended use of students, faculty and staff of Colorado State University, Department of Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences.

The Veterinary Teaching Hospital assumes no responsibility for, and makes no warranty with respect to, results that may be obtained from the uses, procedures, or dosages listed. This formulary is not intended as a substitute for the professional judgment of the veterinarian in the treatment of specific animals. In addition, the Veterinary Teaching Hospital shall not be liable to any person whatsoever for any damage resulting from reliance on any information contained herein, whether with respect to drug identification, uses, procedures, dosages, or equivalencies, or by reason of any misstatement or error, negligent or otherwise, contained in this work.
1. All drugs shall be listed by official name.

2. Other information provided shall be dosage forms available and suggested dosages.

3. Introduction of new drugs and deletion of obsolete items:
   a. Additions and deletions shall be proposed by the Pharmacy and Faculty and reviewed before insertion.
   b. Any member of the veterinary medical staff shall have the privilege of suggesting either additions or deletions.
   c. Proposed drugs shall be considered and acted upon by the Pharmacy and Faculty through e-mail notification. After a decision is reached, the entire staff shall be informed and allowed to review before admission to the formulary.

4. The entire Formulary shall be revised annually.

5. Every addition to and deletion from the Formulary shall be circulated to the entire staff and student body who will be responsible for revising their own copy of the Formulary in the intervening period between the annual revisions.
6. The limitation of inventory which will be accomplished by the Formulary is in no way intended to abridge the use of any drug by any members of the staff when such is for the welfare of the patient.

7. There is no intention whatever that the Formulary shall abridge the use of experimental drugs by the staff. Responsibility to the patient in therapeutic experiments resides in the veterinarian conducting the experiment. A consent form must be signed by the client. Clinicians are encouraged to utilize pharmacy services for dispensing, maintaining records and providing information on investigational or clinical trial drugs.

8. Temporary trial of new, accepted drugs:

   At intervals, new drugs which have been investigated elsewhere may seem to be desirable substitutes for preparations in use here. In such cases, a request from any service to the Pharmacy that a stock of the newer agent be obtained by the Pharmacy will be quickly and probably favorably considered. If, after suitable trial, it appears to be desirable to continue its use, the Pharmacy and Faculty shall consider a request for its permanent addition to the Formulary.

9. Mixtures of drugs:

   The Pharmacy and Faculty, as a whole, are opposed to ordering of mixtures of drugs feeling that each component should be ordered for a patient in the amounts required by him individually.

10. The Pharmacy will compound drugs in the strength and dosage form desired by the clinician as long as it is within the State Guidelines of compounding regulations.

Due to the increased number of compounds we are receiving in the pharmacy we are requesting a minimum of 1 hour to fill your request.
ACEPROMAZINE
(PromAce)
Use: Preanesthetic, Sedative
Dose Form: Inj: 10 mg/ml, 50 ml vial
Oral: 10, 25 mg tabs
Dose:
Lg. An.: 0.05 - 0.1 mg/kg parenteral
Sm. An.: 0.001 - 0.05 mg/kg parenteral
Maximum IV dose 1 mg/dog and 1 mg/cat
1.1 - 2.2 mg/kg (0.5 - 1.0 mg/lb) oral

ACETYLCHOLINE
(Miochol)
Use: Miotic
Dose Form: Ophth soln: 10 mg/ml, 2 ml vial

ACETYLCYSTEINE
(Mucomyst)
Use: Mucolytic
Dose Form: 20% soln, 30 ml

AFOXOLANER
(Nexgard)
Use: Parasiticide
Dose Form: Oral: 11.3 mg, 28.3 mg, 68 mg, 136 mg chewable tablets
Dose:
Oral [Minimum dosage of 1.14 mg/lb (2.5 mg/kg) once a month]
4.0-10.0 lbs: 11.3mg (one tab)
10.1-24.0 lbs: 28.3mg (one tab)
24.1-60.0 lbs: 68 mg (one tab)
60.1-121.0 lbs: 136 mg (one tab)
Over 121.0 lbs: Administer the appropriate combination of chewables
Note: Not for puppies less than 8 weeks. Must weigh at least 4.0 lbs.
ALBUMIN
Use: hypoalbuminemia,
Dose Form: 25%; 50 or 100 ml vial (Human Albumin)

ALBUTEROL
Use: Bronchodilator
Dose Form: Inhalation: 17 Gm Metered Inhaler (90 mcg/activation)
Dose: H: 2 mcg/kg up to q 6 h for inhalation
D: 50 mcg q 8 - 12 h for inhalation
C: 180 mcg to charge Aerokat. Use q 8 - 12 h for inhalation
Note: Use Aeromask to administer inhalation

ALCOHOL, ETHYL
Use: Nerve block, Ethylene glycol toxicity
Dose Form: 95%, pints

ALCOHOL, ISOPROPYL
Use: Antiseptic, Skin disinfectant
Dose Form: Topical: 70%, gallon

ALIMENTATION, ORAL
(CliniCare Canine/Feline Liquid Diet)
Use: Nutritional supplement
Dose Form: Oral liquid: 8 oz can, approx. 1 Kcal/ml
Dose: D,C: Calculate animal's daily caloric requirement (DCR)
       Day 1: Give 1/4 DCR
       Day 2: Give 1/2 DCR
       Day 3 and on: Give total DCR dividing volume into frequent feedings (4 to 7 times per day) or by constant infusion.
Note: Specific formulations are available through Pharmacy

ALFAXALONE
Use: Anesthesia
Dose Form: 10mg/ml, 10 ml vial
Dose: D: 1 to 2 mg/kg IV
C: 4 to 5 mg/kg IV
ALPRAZOLAM
Use: Anti-anxiety, treat unwanted behavior in dogs and cats
Dose Form: oral 1mg tablet
Dose: D: 0.01-0.1mg/kg as needed not to exceed 4mg/dog/day
      C: 0.125-0.25mg/kg q8h/ q12h/ q24h

ALTRENOGEST
(Regu-Mate)
Use: Oral progestin
Dose Form: Oral liquid: 2.2 mg/ml, 1000 ml bottle
Dose: H: 44 mcg/kg daily for 15 days

ALUMINUM HYDROXIDE
(Amphojel)
Use: Phosphate Binder
Dose Form: Oral: 64 mg/ml suspension, powder sold by the gram (1/4 tsp=500 mg)
Dose: 30 - 90 mg/kg per day. May be divided.
Note: Extralabel use in food animal
      Suggested withdrawal: Meat 18 months
            Milk 120 hours

AMANTADINE
Use: Adjunct for chronic pain
Dose Form: oral: 100mg tablets; 10mg/ml oral solution
Dose: D: 1.25-4mg/kg q 12-24h
      3mg/kg q 24h as an adjunct with a NSAID
      C: 3mg/kg q 24h

AMIKACIN
(Amiglyde-V, Amikin)
Use: Antibiotic, Gram neg., Aminoglycoside
Dose Form: Inj: 250 mg/ml, 4ml and 48 ml vial
Dose: D: 15 mg/kg/day (6.8 mg/lb/day) as a single daily dose, IM or IV
      H: 15-25 mg/kg q24h, IV or IM

Extra Label Food Animal Withdrawal Time: Milk, minimum 120 hours, Meat, minimum 18 months. Recommend testing milk or urine to ensure a negative residue test.

AMINO ACIDS
(Freamine III)
Use: Nutrient
Dose Form: Inj: 10%, 2000 ml bag
AMINOCAPROIC ACID
Use: Treat Degenerative Myelopathy
Dose Form: Inj (used orally): 250 mg/ml, 20 ml vials
Dose: D: 15 mg/kg q 8 h, PO

AMINOPHYLLINE
Use: Bronchial dilator, Pulmonary edema diuretic
Dose Form: Inj: 25 mg/ml, 10 ml vial
Dose: H,B: 2 - 9 mg/kg (1 - 4 mg/lb) IM or slow IV
D: 10 mg/kg (5 mg/lb) q 8 h, IM or IV
C: 5 mg/kg (2.27 mg/lb) q 12 h, IM or IV

AMIODARONE
Use: Antiarrhythmic
Dose Form: 200 mg tab
Dose: D: Loading: 10 - 15 mg/kg daily for 10 days
      Maintenance: 5 - 10 mg/kg daily

AMITRIPTYLINE
Use: Behavior modification, Feline lower urinary tract inflammation
Dose Form: 10, 25, 50 mg tabs
Dose: D: 1 - 2 mg/kg daily or BID
      C: 5 - 10 mg/cat at bedtime

Note: Results may not be seen for 2 to 4 weeks. Requires long term, continuous treatment.

AMLODIPINE
(Norvasc)
Use: Calcium channel blocking agent
Dose Form: Oral: 2.5 mg tab
Dose: D: 0.2 mg/kg once daily, PO
      C: 0.625 mg/cat (1/4 tab) once daily, PO

AMMONIUM CHLORIDE
Use: Urinary acidifier
Dose Form: Oral: Granules
Dose: H: 4 - 15 Gm
      B: 15 - 30 Gm
      D,C: 1.1 Gm (1/4 tsp) with meal daily or divided according to number of feedings/day
      D: Tolerance test: 100 mg/kg
      Ll,Sh,Sw: 50-100 mg/kg PO q12h for urine acidification.
      - Dissolve 200g NH₄Cl in 500ml water and then add 500 ml molasses (final concentration 200mg/ml). Administer at 0.25 to 0.5 m./kg twice daily orally.
AMOXICILLIN
(Amoxi-Drops, Amoxi-Tabs)

Use: Broad spectrum antibiotic
Dose Form: Oral: 100, 200, 400 mg tabs
50 mg/ml susp, 15 ml bottle
Dose: C: 11 mg/kg (5 mg/lb) bid PO
D: 11 - 22 mg/kg (5 - 10 mg/lb) bid to tid PO

AMOXICILLIN-CLAVULANIC ACID
(Clavamox)

Use: Broad spectrum antibiotic (effective against many penicillinase producing pathogens)
Dose Form: Oral: Fixed combination with 4 parts amoxicillin and 1 part clavulanic acid as the potassium salt.
62.5, 125, 250, 375 mg tabs of drug combination.
62.5 mg/ml susp, 15 ml bottle
Dose: D,C: 13.75 mg/kg (6.25 mg/lb) of combination bid or for severe generalized or deep canine bacterial pyoderma use tid

AMPICILLIN
(Polyflex)

Use: Broad spectrum antibiotic
Dose Form: 25 gram vial
Dose: B: 2 - 5 mg/lb. q 24h IM for a maximum of 7 days
Withdrawal: 6 days meat; 48 hr. milk

AMPICILLIN SODIUM

Use: Broad spectrum antibiotic
Dose Form: Inj: 1 Gram
Dose: H: 6.6 - 11 mg/kg (3 - 5 mg/lb) bid or tid, IM or IV
D,C: 22 mg/kg (10 mg/lb) tid, IM or IV
Note: Approximately 6% loss of potency per 8 hrs when mixed to 100 mg/ml and stored in the refrigerator.

AMPICILLIN-SULBACTAM
(Unasyn)

Use: Broad spectrum antibiotic(effective against many penicillinase producing pathogens
Dose Form: Inj: 3 gm vial, diluted to 30 mg/ml with 100 ml NaCl 0.9%, makes 20 mg/ml ampicillin/ 10 mg/ml sulbactam (combined)
Stable for 72 hrs. if refrigerated.
Dose: D,C: 50mg/kg (combined) q 8h, IV
ANTIVENIN
Use: Anti-snake venom against viperene snakes, 2 versions of this product

Anti-venom administration in Cubex, (imported from Mexico)

Dose Form: Inj: 10 ml vial
Dose: D, H: 1 - 5 vials q 2 h, IV

APIXABAN
(Eliquis)
Use: Xa Inhibitor Anticoagulant

Dose Form: 2.5 and 5 mg tablets
Dose: F: < 5 kg - 0.625 mg bid
     >5 kg - 1.25 mg bid
D: < 5 kg - 0.625 mg bid
    5 – 10 kg - 1.25 mg bid
    10 – 20 kg – 1.875 mg bid
    20 – 30 kg -2.5 mg bid

Note: very expensive

APOMORPHINE
Use: Emetic

Dose Form: 6 mg tablets compounded. Placed in a 10 ml vial to be diluted with 2 ml of bacteriostatic water to make 3 mg/ml then filtered through 0.22 micron filter before use.

Dose: D: 0.03 to 0.04 mg/kg IV or IM.

ARTIFICIAL TEARS
(Absorbotears, Tears Renewed, HypoTears)
Use: Ocular lubricant

Dose Form: Ophth soln: 15 ml bottle
Dose: 1 to 2 drops in affected eye(s) as needed

ASPIRIN
(Acetylsalicylic Acid)
Use: Analgesic, Antipyretic, Anti-inflammatory

Dose Form: Oral: 81, 325 mg tabs
Commonly compounded in 5, 10 and other strengths

Dose: H: Antiprostaglandin: 25 mg/kg (11.5 mg/lb) bid first day, then 30 mg/kg (13.5 mg/lb) daily
Sw: 10 mg/kg (4.5 mg/lb) q 6 h
B,Sh: 100 mg/kg (45.5 mg/lb) q 12 h
D: 25 mg to 35 mg/kg (11.4 - 16 mg/lb) q 12 h for antirheumatic
    10 mg/kg (4.5 mg/lb) q 12 h for analgesic, antipyretic
    D: 1 – 2 mg/kg BID for antithrombic dose
C: 10 mg/kg (4.5 mg/lb) every other day
ATENOLOL

Use: Beta one blocker
Dose Form: Oral: 25 mg tabs, commonly compounded in liquid form
Dose: D: 0.5 - 1 mg/kg bid, PO
       C: 6.25 mg/cat daily, PO

ATIPAMEZOLE
(Antisedan)

Use: Alpha-2 antagonist (specific for dexmedetomidine)
Dose Form: Inj: 5 mg/ml
Dose: D: Administer IM same volume (ml) as dexmedetomidine given
       Note: Administer IM regardless of dexmedetomidine route of administration

ATRACURIUM
(Tracurium)

Use: Neuromuscular blocking agent (adjunct to anesthesia)
Dose Form: Inj: 10 mg/ml, 5 ml vial
Dose: D,C,H: 0.1 - 0.4 mg/kg IV

ATROPINE

Use: Anticholinergic, Mydriatic, Cycloplegia
Dose Form: Inj: 0.5 mg/ml (Sm. An.), 100 ml vial
       Ophth oint: 1%, 3.5 Gm tube
       Ophth soln: 1%, 5 ml bottle
Dose: 0.04 mg/kg (0.02 mg/lb), IV, SQ
       Note: 0.2 mg/kg (0.1 mg/lb), IV or SQ in organophosphate intoxication

AZATHIOPRINE
(Imuran)

Use: Immunosuppressive, Antimetabolite
Dose Form: Oral: 50 mg tab
Dose: D: 2.2 mg/kg daily or qod, PO
       C: 0.3 - 1.0 mg/kg qod, PO

AZITHROMYCIN

Use: Macrolide Antibiotic
Dose Form: Oral 250mg tablet
Dose: D,C: 5-10mg/kg PO q24h for 3 to 5 days
       E: 10 mg/kg PO q24h for 5 days, followed by q48h
BACITRACIN
Use: Antibiotic
Dose Form: Ophth oint: with neomycin and polymyxin, 3.5 Gm tube (Neosporin)

BECLOMETHASONE
Use: Aerosol anti-inflammatory, OTIC SUSP (Otomax)
Dose Form: 7.3 Gm Metered inhaler (40 mcg/activation)

BENAZEPRIL (Lotensin)
Use: ACE inhibitor, vasodilator
Dose Form: 5 and 20 mg tabs
Dose: D, C: 0.25 to 0.5 mg/kg once daily, PO

BENZOYL PEROXIDE (Pyoben)
Use: Keratolytic, Antimicrobial
Dose Form: Shampoo: 3%, 8 oz bottle
Topical Gel

BETAMETHASONE (Otomax)
Use: Corticosteroid therapy
Dose Form: Otic: 0.1% with gentamicin 0.3% and clotrimazole 1%
15 Gm bottle
Dose: D,C: 4 - 8 drops in ear bid

BETHANECHOL (Urecholine)
Use: Cholinergic to treat urinary retention and GI atony
Dose Form: Oral: 5 mg tab
Dose: D: 2.5 - 30 mg tid to qid, PO
C: 2.5 - 10 mg tid to qid, PO
Note: Try lower dosage initially

BIO-SPONGE
Use: Intestinal Adsorbent
Dose Form: Oral powder
Dose: H: 1 pound of powder per 1000 pounds of horse
**BISMUTH SUBSALICYLATE**  
(Bismusal Suspension)  
*Use:* Anti-diarrheal  
*Dose Form:* Oral susp: 1.75%, gallon  
*Dose:*  
- **H:** 6 to 10 ounces every 2 to 3 hrs  
- **Foals, calves:** 3 to 4 ounces every 2 to 3 hrs  
- **B:** Neonate – 0.2-0.5 ml/kg PO q6-24h  
  - Adult – 4-8 ml/kg PO q24h or divided into smaller doses more frequently.  
- **Ll, Sh:** Neonate – 0.2-0.5 ml/kg PO q6-24h  
  - Adult – 0.5-1.0 ml/kg PO q6-24h  
- **D:** 1 to 3 tablespoons every 1 to 3 hrs

**BORIC/ACETIC ACID**  
(MalAcetic)  
*Use:* Cleansing Wipes  
*Dose Form:* Wet Wipes, 25/ctn  
*Dose:* For Dog and Cat use

**BUDESONIDE**  
*Use:* Corticosteroid therapy  
*Dose Form:* Oral, 0.5,1, and 2 mg capsules, compounded  
*Dose:*  
- **D:** 1 - 3 mg per dog, BID  
- **C:** 0.5 - 3 mg per cat, q24h

**BUPIVACAINE**  
(Marcaine)  
*Use:* Long duration local anesthetic  
*Dose Form:* Inj: 0.25% & 0.75%, 30 ml single dose vial  
0.5% with epinephrine 1:200,000, 50 ml vial

**BUPRENORPHINE**  
(Buprenex)  
*Use:* Opioid Partial Agonist, Analgesic  
*Dose Form:* Inj: 0.3 mg/ml, 1 ml vial ; compounded 0.3 mg/ml for oral use  
*Dose:*  
- **D:** 0.007 – 0.02 mg/kg, IM, SQ or PO  
- **C:** 0.01 - 0.02 mg/kg, transmucosal (sublingual), IM, IV or SQ q 6 hours  
- **B,Sh,Ll:** 0.05 mg/kg IV, IM, or SQ q6h

*Note:* Controlled Substance – Schedule III
**BUTORPHANOL**  
(Torbugsic, Torbutrol)

**Use:** Central acting analgesic, Narcotic agonist/antagonist, Antitussive

**Dose Form:**  
- **Inj:** 10 mg/ml, 50 ml vial  
- **Oral:** 5 mg tabs

**Dose:**  
- **H:** 0.02 - 0.05 mg/kg, IV  
- **Ruminants:** 0.05 -0.1 mg/kg q 6 - 8 h, IV,IM,SQ  
  Suggested Withdrawal: Meat 48 hrs; Milk 48 hrs.  
- **D:** 0.55 to 1.1 mg/kg q 6 – 9 h, PO  
  0.1 mg/kg IV  
  0.1 - 0.5 mg/kg q 1 - 4 h, SQ or IM  
- **C:** 0.1 - 0.25 mg/kg IV  
  0.25 - 0.5 mg/kg SQ or IM

**Note:** Butorphanol may partially antagonize mu opioid agonists  
Controlled Substance - Schedule IV

**CALCITRIOL**  
(Rocaltrol)

**Use:** Hypocalcemia, Vitamin D analog

**Dose Form:** Oral: 1 mcg/ml liquid, doses in nanograms

**Dose:**  
- **D:** 30 nanograms/kg daily  
- 2.5-3.5 nanograms/kg daily (chronic renal failure)

Capsules no longer stocked.

**CALCIUM DISODIUM EDETATE**  
(Calcium Disodium EDTA, Calcium Disodium Versenate)

**Use:** Lead poisoning

**Dose Form:** Powder for compounding, these products must be compounded.  
(Usual conc: 66 mg/ml or 200 mg/ml)

**Dose:**  
- **D,C:** 25 mg/kg (11.4 mg/lb) diluted to 10 mg/ml in 5% dextrose and given SQ 4 times daily for 5 days  
- **B:** 72.5 mg/kg/day divided bid or tid, given slowly IV

**CALCIUM GLUCONATE/BOROGLUCONATE**

**Use:** Hypocalcemia

**Dose Form:**  
- **Inj:** 10% soln, 10 ml amp  
- **Sh:** 25 - 50 ml 23%  
  50 - 125 ml Ca, Mg, P, Dextrose soln

**Dose:**  
- **B:** 500 - 1000 ml 23%  
  200 - 500 ml Ca, Mg, P, Dextrose soln  
- **Sw:** 50 - 100 ml 23%  
- **D:** 10 - 30 ml 10%  
- **C:** 5 - 15 ml 10%
CACIUM GLUBIONATE

**Use:** Calcium Supplement

**Dose Form:** Oral 23 mg (elemental CA+)/ml of solution

**Dose:** Reptiles: 1 mg/kg q12h

CARBOPLATIN

(Paraplatin)

**Use:** Antineoplastic agent

**Dose Form:** 450 mg, MDV vial

**Dose:**
- D: 300 mg/m² (follow oncology protocol)
- C: 200-250 mg/m²

CARBOXYMETHYLCELLULOSE, SODIUM

**Use:** Lubricant for rectal exams, Dystocia

**Dose Form:**
- 1.5%, gallon
- 1%, 1000 ml (sterile)

CARPROFEN

(Rimadyl)

**Use:** Analgesic, Anti-inflammatory

**Dose Form:**
- 25, 75 and 100 mg in both chewable and plain tabs
- Inj. 50 mg/ml; 20 ml vial

**Dose:**
- D: 2.2 mg/kg (1 mg/lb) bid or 4.4 mg/kg q 24h, PO, SC
- H: 0.7 mg/kg q24h, PO

CARVEDILOL

(Coreg)

**Use:** Non-selective beta blocker

**Dose Form:** Oral: 3.125 mg, 6.25 mg, 12.5 mg and 25 mg tablets

**Dose:**
- D: 0.5 mg/kg bid PO for beta-blockade
- 0.7-0.9 mg/kg bid PO for maximum beta-blockade

**Note:** Dosing should start low (0.05-0.1 mg/kg PO bid) and be escalated slowly over a period of several weeks especially in dogs with heart failure
CEFAZOLIN

Use: First generation cephalosporin antibiotic
Dose Form: Inj: 1 and 10 GM vials
Dose: D, C: 22 mg/kg (10 mg/lb) IV, IM, or SQ q8h. For surgical prophylaxis give within 30 minutes of actual surgery and repeat every 90 minutes.
H: 11 mg/kg q 6 – 8 h, IM or IV
Foal: 20 mg/kg q8 -12h, IV

CEFOVICIN
(Convenia)

Use: Treatment of skin infections
Dose Form: Injectable 80mg/ml
Dose: D/C: 8mg/kg SQ dosed at 14 day intervals

NOTE: This product has to be diluted in the pharmacy and only has a 56 day stability. It is very expensive and may only require one dose.

CEFOXITIN
(Mefoxin)

Use: Second generation cephalosporin antibiotic
Dose Form: Inj: 1 Gm vial
Dose: D, C: 22 mg/kg (10 mg/lb) tid

CEFPODOXIME PROXETIL
(Simplicef)

Use: Third generation oral cephalosporin antibiotic
Dose Form: Oral: 100 and 200 mg tabs
Dose: D: 5-10 mg/kg q 24h
C: 5 mg/kg q 12h

CEFTAZIDIME

Use: Third generation cephalosporin antibiotic
Dose Form: Inj: 1 Gm vial
Dose: D: 30 mg/kg q 8 h
Note: Mix with 9.5 ml of diluent to prepare 100 mg/ml. Stable in refrigerator for 7 days or in freezer for 3 months.
CEFTIOFUR SODIUM
(Naxcel)

Use: “Extended Spectrum” cephalosporin antibiotic

Dose Form: 1 Gm, 4 Gm Vials (50 mg/ml when reconstituted)

Dose:

- **B:** 1.1 to 2.2 mg/kg (0.5 to 1 mg/lb) IM, SQ,
- **H:** 2.2 - 4.4 mg/kg (1.0 mg/lb) bid, IV or IM
- **Sw:** 3 - 5 mg/kg IM q24h
- **Sh, Li:** 1.2 - 2.2 mg/kg IM q24h
- **Foals:** 4.4 - 6.6 mg/kg bid, IV or IM

Note:

- **EXTRALABEL use in food animals is only allowed at the label dosages and routes. Extralabel dosages are ILLEGAL. Naxcel can be used for minor livestock species and indications that are not on the label.**
- **Withdrawal Time**
  - **Bovine:** Meat 4 days, Milk 0 days
  - **Porcine:** Meat 4 days
  - **Sheep and Goats:** Meat and Milk 0 days

CEFTIOFUR HYDROCHLORIDE
(Excenel RTU)

Use: “Extended Spectrum” cephalosporin antibiotic

Dose Form: 50 mg/ml injectable solution in an oil base

Dose:

- **B:** 1.1 - 2.2 mg/kg IM or SQ q24h for up to 5 days
- **Sw:** 3 - 5 mg/kg IM q24h for up to 3 days

Note:

- **EXTRALABEL use in food animals is only allowed at the label dosages and routes. Extralabel dosages are ILLEGAL. Excenel can be used for minor livestock species and indications that are not on the label.**
- **Withdrawal Time**
  - **Bovine:** Meat 3 days, Milk 0 days
  - **Porcine:** Meat 4 days
**CEFTIOFUR CRYSTALLINE FREE ACID**

(Excede)

**Use:** “Extended Spectrum” cephalosporin antibiotic

**Dose Form:**
- Excede for Cattle - 200 mg/ml, 100 ml vial
- Excede for Horses – 200 mg/ml, 100ml vial
- Excede for Swine – 100 mg/ml, 100ml vial

**Dose:**
- **B:** 6.6 mg/kg administered as a single subcutaneous injection in the posterior aspect of the ear where it attaches to the head. for 5 day therapy
- **H:** 6.6 mg/kg IM as two doses 4 days apart. No more than 20ml per site.
- **Sw:** 5 mg/kg IM as a single injection in the post-auricular region of the neck. No more than 2 ml per injection site.

**Note:**
- **EXTRALABEL use in food animals is only allowed at the label dosages and routes. Extralabel dosages are ILLEGAL. Excede can be used for minor livestock species and indications that are not on the label.**
- **Use of injection volumes and sites other than directed can lead to illegal residues in tissues.**
- **Withdrawal Times:**
  - **Bovine:** Meat 13 days, Milk 0 days
  - **Porcine:** Meat 14 days

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**CEPHALEXIN**

(Keflex)

**Use:** First generation cephalosporin antibiotic

**Dose Form:** Oral:
- 25 mg/ml susp (100 ml bottle)
- 250 and 500 mg capsules
- 250 mg tablets

**Dose:**
- **D,C:** 11 - 22 mg/kg (5 - 10 mg/lb) tid
- **D** Dermatology dose 22-32 mg/kg bid to tid

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**CEPHAPIRIN**

**Use:** First generation cephalosporin antibiotic

**Dose Form:** IMM:
- 200 mg/10 ml (Today) Lactating cow
- 300 mg/10 ml (Tomorrow) Dry cow (cephapirin/benzathine)

**Dose:**
- **Lact. Cows:** 200 mg IMM per affected quarter q 12 h
- **Dry Cows:** Infuse at time of drying once
CETYL MYRISTOLEATE

**Use:** Nutraceutical for joint health

**Dose Form:** Chewable tablets containing:

- Cetyl Myristoleate 225 mg
- Vitamin C 50 mg
- Glucosamine HCL 225 mg
- Manganese 0.5 mg
- MethylSulfonylMethane 75 mg
- Zinc 1 mg
- Hydrolyzed Collagen 225 mg
- Copper 0.2 mg

**Dose:** D: 1 tablet per 20 lbs

CHARCOAL, ACTIVATED

**Use:** Adsorbent for GI toxins/ Drug overdoses

**Dose Form:** Gel 60 ml, PO; Activated Charcoal and Attapulgite clay

**Dose:** D,C: 1 – 3 ml/kg

CHLORAMBUCIL

(Leukeran)

**Use:** Antineoplastic agent

**Dose Form:** Oral: 2 mg tab

**Dose:** D,C: 0.2 mg/kg or 6 mg/m² daily

**D:** Large one time dose 1.4 mg/kg

**Note:** Requires refrigeration

Very expensive

CHLORAMPHENICOL

(Chloromycetin)

**Use:** Broad spectrum antibiotic

**Dose Form:** Oral: 250 mg and 500 mg and 1 GM tabs

**Dose:** H,D: 50 mg/kg tid, PO

C: 50 mg/kg q 12 h, PO or IM

CHLORHEXIDINE

**Use:** Antiseptic

**Dose Form:** 3% shampoo, 8 oz bottle (Etiderm)

4% shampoo & spray, 8 oz bottle (TrizChlor 4)

2% solution, gallon (Nolvasan)

4% skin cleanser, gallon (Hibiclens, BetaSept)

CHLORPHENIRAMINE

(Aller-Chlor, Chlortrimeton)

**Use:** Antihistamine

**Dose Form:** Oral: 4 mg tab

**Dose:** D: 4 - 8 mg/dog bid to tid

C: 2 - 4 mg/cat once or twice daily
**CISAPRIDE**

*Use:* Cholinergic enhancer, GI Prokinetic agent  
*This is a compounded medication*

*Dose Form:* 2.5, 5 and 10 mg compounded caps  
*Dose:* D, C: 0.1 - 0.5 mg/kg up to TID given 30 min before meals

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**CLENBUTEROL**  
*(Ventipulmin)*

*Use:* Bronchodilator  
*Dose Form:* Oral liquid: 72.5 mcg/ml, 330 ml  
*Dose:* H: 0.8 mcg/kg bid. May double dose every three days if no improvement is seen up to 3.2 mcg/kg. If no improvement is seen, discontinue therapy.

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**CLINDAMYCIN**  
*(Antirobe)*

*Use:* Antibiotic  
*Dose Form:* Inj: 150 mg/ml, 4 ml vial  
Oral: 25, 75, 150 mg caps  
25 mg/ml soln, 20 ml btl  
*Dose:* D,C: 5.5 - 11.0 mg/kg (2.5 - 5.0 mg/lb) bid PO  
D: 5 - 12.5 mg/kg q 12 h IV, IM or SC  
C: 12.5 mg/kg (5.7 mg/lb) bid PO,IM for 28 days for toxoplasmosis  
5 - 12.5 mg/kg q 12 h SC,IV

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**CLOMIPRAMINE**  
*(Clomicalm)*

*Use:* Separation anxiety, behavior modification  
*Dose Form:* oral 80mg tablets  
*Dose:* D: 1-3mg/kg once or twice daily  
C: 0.25-1 mg/kg once daily.  
Avian: 0.5-3mg/kg once or twice daily for feather picking, start with a low dose and gradually increase dose every 4 to 5 days as needed

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**CLOPIDOGREL**  
*(Plavix)*

*Use:* Platelet Aggregation Inhibitor  
*Dose Form:* Oral 75mg tablet  
*Dose:* D: 1-3mg/kg PO q24h  
(If given with aspirin lower dose to 0.5-1mg/kg)  
C: ¼ tablet (18.75mg) q24h  
1-3mg/kg PO q24h  
(if given with aspirin lower dose to 0.5mg-1mg/kg)  
E: 4 mg/kg PO q24h loading dose decrease to 2 mg/kg maintenance
CLOTRIMAZOLE
(Otomax)
Use: Antifungal
Dose Form: Otic: 1% with gentamicin 0.3% and betamethasone 0.1%, 15 Gm btl (Otomax); or mometasone Furoate, 15 Gm btl (Mometamox)

COAT CONDITIONER
(Humilac, Resisoothe, Hydra-Pearls)
Use: After shampoo rinse, conditioner
Dose Form: 8 oz bottle (Humilac)
12 oz bottle (Hydra-Pearls)

COPPER NAPHTHENATE
(Kopertox)
Use: Protectant, Antibacterial
Dose Form: Topical soln: 37.5%, pint
Note: For use on hooves only

CORN OIL
Dose: D: 3 ml/kg for Fat Absorption Test

COSYNTROPIN
(Cortrosyn)
Use: Synthetic Subunit of ACTH (for diagnostic test)
Dose Form: 0.25 mg vial lyophilized powder
Dose: D: 0.125 mg <20 kg or 0.25 mg (1 vial) > 20 kg IV or IM. (Post sample 1 hr later)
C: 0.125 mg IV or IM. (Post samples taken at 30 min and 60 min)
Note: Expensive approx. $112/vial; can split vial in half

CYCLOPHOSPHAMIDE
(Cytoxan)
Use: Antineoplastic
Dose Form: Oral: 25, 50 mg tabs
Inj: 500 mg vials (reconstitute with 25 ml of D5W to make 20 mg/ml)
Dose: D: 50 mg/m² once daily 3 to 4 days per week or 250 mg/m² once every 3 weeks
200 – 250 mg/m² IV or PO per chemotherapy cycle
**CYCLOSPORINE**  
Use: Immunosuppressive  
Dose Form: Oral Capsule: 10, 25, 50 AND 100 mg (Atopica)  
Oral liquid: Atopica liquid for feline 100 mg/ml (5 & 17 ml)  
Ophth Oint: 0.2%, 3.5 Gm tube (Optimmune),  
1% and 2% Soln., 15 ml (compounded)  
Dose: D: 5 mg/kg of Atopica once daily or divided and given bid  
C: 5 – 7.5 mg/kg of Atopica once daily or divided and given bid  
Ophth Oint: 1/4 inch strip q 12 h

**CYPROHEPTADINE**  
(Periactin)  
Use: Appetite Stimulant  
Dose Form: 4 mg (scored) tabs  
Dose: D: 0.5 mg/kg tid, PO  
C: 1 - 2 mg/cat daily to bid, PO

**CYTARABINE**  
(Cytosine Arabinoside, Cytosar-U)  
Use: Antineoplastic, antiinflammatory agent  
Dose Form: Inj: 20 mg/ml, 50 ml vial  
Dose: D: Low Dose: 10 mg/m² daily or q 12 h, SQ or IM  
High Dose: 60 mg/m² daily for 4 days every 3 weeks, SQ, IM, or IV  
GME: 400 -600 mg/ m² divided SQ, bid for 4 doses q 3 – 4 weeks prn  
(Dr. Pearce)  
100 mg/m2 SQ q24h for 4 doses (Dr. Klopp)

**DERACOXIB**  
(Deramxx)  
Use: Analgesic, Anti-inflammatory  
Dose Form: 25, 75,100 mg chewable tabs  
Dose: D: Acute Pain: 3 - 4 mg/kg daily PO 7 days maximum  
Chronic Pain: 1 - 2 mg/kg daily PO

**DESMOPRESSIN**  
(DDAVP)  
Use: ADH derivative, increases factor VIII activity  
Dose Form: 0.01% solution  
Dose: D: 1 mcg/kg (0.45 mcg/lb) SQ, 20 to 30 minutes prior to collecting blood or performing surgery
DESOXYCORTICOSTERONE
Use: Mineralocorticoid
Dose Form: Inj: 25 mg/ml pivalate salt, 4 ml vial (Percorten Pivalate)
Dose: D: 2.2 mg/kg (pivalate salt) every 25 days, IM

DETOMIDINE
(Dormosedan)
Use: Sedative, Analgesic
Dose Form: Inj: 10 mg/ml, 20 ml vial;
Dose: H: 5 - 10 mcg/kg, IV
10 - 20 mcg/kg, IM
40 mcg/kg diluted to 10 ml in saline for epidural

DEXAMETHASONE
(Azium, Decadron)
Use: Corticosteroid therapy
Dose Form: Inj: 2 mg/ml, 100 ml vial
Oral: 4 mg tab
Ophth oint: 0.1% with neomycin 3.5 mg/Gm and polymyxin B
10,000 U/Gm, 3.5 Gm tube
Ophth susp: 0.1%, 15 ml bottle, 0.1% with neomycin 3.5 mg/ml and polymyxin B
10,000 u/ml, 5 ml
Dose: H,B,Sw: 0.1 mg/kg (0.05 mg/lb), IM
Ll: 0.11 - 0.22 mg/kg, IV, IM, SQ, daily
D,C: 0.28 to 2.2 mg/kg (0.125 to 1 mg/lb), PO or IM
0.01 mg/kg screening dose, IV
1.0 mg/kg suppression dose, I

DEXAMETHASONE SODIUM PHOSPHATE
(Azium SP)
Use: Corticosteroid therapy
Dose Form: Inj: 4 mg/ml (3 mg of dexamethasone base per ml), 100 ml vial
Note: For IV use only. Dose similar to above.

DEXMEDETOMIDINE
(Dexdomitor)
Use: Small animal sedative, analgesic
Dose Form: injectable 0.5mg/ml
Dose: D,C: Anesthesia dose for canine and feline 1 – 20 mcg/kg IM or 1 – 5 mcg/kg IV
D: Oral dose 40 mcg/kg
DEXTROSE  
**Use:** Nutrition  
**Dose Form:** Powder for compounding  
**Inj:** 50%, 50 and 500 ml vial  
**Note:** Approximately 4 Calories per gram of Dextrose. See also Parenteral Fluids

DIAZEPAM  
*(Valium)*  
**Use:** Tranquilizer, Anticonvulsant  
**Dose Form:**  
**Inj:** 5 mg/ml, 2 ml vial  
5 mg/ml, 10 ml vial  
**Oral:** 5 mg tab  
**Dose:**  
**D:** 0.1 – 0.5 mg/kg, IM,IV  
0.2 mg/kg/hr, CRI (starting dose)  
1 - 2 mg/kg, per rectum to effect up to maximum dose of 40 mg.  
2.5 - 5 mg TID PO  
**C:** 0.1 – 0.5 mg/kg, IM, IV  
For appetite stimulant: 0.05 - 0.1 mg/kg IV  
**H:** 0.1 mg/kg, IV  
0.35 - 0.66 mg/kg pre-anesthetic, IV  
**B:** 0.1 – 0.5 mg/kg, IM or IV for sedation  
0.5 – 1.5 mg/kg, IM or IV for CNS hyperactivity and seizures  
**Sh, Li:** 0.1 – 0.5 mg/kg, IM or IV for sedation  
0.5 – 1.5 mg/kg, IM or IV for CNS hyperactivity and seizures  
**Sw:** 0.1 – 0.5 mg/kg IM for sedation  
0.5 – 1.5 mg/kg IM or IV for CNS hyperactivity and seizures  
**Note:** Controlled Substance - Schedule IV

DICLOFENAC SODIUM  
*(Surpass)*  
**Use:** Ophthalmic NSAID, Topical for equine (Surpass)  
**Dose Form:** Ophth. Soln 0.1%, 5 ml btl and Topical is 1%  
**Dose:**  
**D:** 1 drop tid  
**E:** Apply topically (wear gloves when handling)
DIETHYLSTILBESTROL

**Use:** Urinary incontinence
**Dose Form:** Oral: 0.5 and 1 mg compounded capsules
**Dose:** D,C: 0.02 mg/kg up to 1 mg total once a day for 3 to 5 days then once weekly, PO

Note: **ILLEGAL** in all food animal species including cattle, sheep, goats, and swine

DILTIAZEM

**Use:** Calcium channel blocking agent
**Dose Form:** Oral: 30 mg tabs
Oral: commonly compounded, Cardizem CD) 30,45 and 60 mg
Diltiazem ER 240 mg caps (contain four 60 mg tabs)
**Dose:** Inj: 5 mg/ml, 10 ml vial
D: 0.5 - 1.5 mg/kg (0.22 - 0.7 mg/lb) tid PO
D: 1.5 - 6 mg/kg of extended release form once daily PO
D,C: 0.25 mg/kg IV bolus. May repeat once after 3 minutes PRN for supraventricular tachycardia followed by CRI of 2 to 6 mcg/kg/minute
C: 1.75 mg/kg every 8 hours (Approx. 7.5 mg/adult cat) PO
C: 60 mg extended release tab once daily PO

DIMETHYL SULFOXIDE
(DMSO, Domoso)

**Use:** Anti-inflammatory
**Dose Form:** Topical: 90% gel; 4.25 oz.
  90% soln, pint
Otic: 60% with fluocinolone 0.01%, 8 ml bottle (Synotic)
**Dose:** Otic: D: 4 to 6 drops per ear bid
H,B: 1 gm/kg as 10 to 20% in an isotonic solution, IV over 30 to 60 minutes, once to twice daily for 3 days.

Note: May cause hemolysis when given IV to horses.

DINOPROST
(Lutalyse, Prostin F2 Alpha)

**Use:** Abortifacient, Luteolytic, Estrus synchronization, Parturition
**Dose Form:** 5 mg/ml; 30 ml vial
**Dose:** H: 0.022 mg/kg (0.01 mg/lb) IM
B: 25 mg IM for abortifacient
  25 mg IM once or twice at 10 to 12 day interval for estrus synchronization
Sw: 10 mg IM for induction of parturition
Ll: 10 mg SQ, repeat in 24 hrs for abortifacient

Note: Several deaths and other adverse effects reported in llamas.
**DIPHENHYDRAMINE**  (Benadryl)

*Use:* Antihistamine

*Dose Form:* Inj: 50 mg/ml, 1 ml vial  
Oral: 25, 50 mg caps

*Dose:* 
- D: 2 - 4 mg/kg, q 6-8 hours, IV or IM  
- 2 - 4 mg/kg, q 8 hours, PO

B,Sh,Ll: 0.5 – 1 mg/kg IM or IV for anaphylaxis

**DOBUTAMINE**  (Dobutrex)

*Use:* Beta 1 adrenergic agonist

*Dose Form:* Inj: 250 mg vial, 20 ml vial

*Dose:* D: 5 - 20 mcg/kg/min IV constant rate infusion

**DOMPERIDONE**  (Equidone)

*Use:* D2 Dopamine receptor antagonist in horses

*Dose Form:* 11% gel 25 cc oral dose syringe

*Dose:* H: 5 cc/1000lb mare for 5 days

**DOPAMINE**  (Intropin)

*Use:* Beta 1 adrenergic agent with norepinephrine releasing

*Dose Form:* Inj: 40 mg/ml, 5 ml amp

*Dose:* See constant rate infusion dosage in Section V.

B: CRI for renal failure 0.5 to 3 mcg/kg/min

**DORZOLAMIDE**  (Trusopt, Cosopt)

*Use:* Carbonic anhydrase inhibitor

*Dose Form:* Ophth: 2% soln, 5 ml; combination with timolol (22.3 mg/ml-6.8 mg/ml)

*Dose:* 1 drop TID

*Note:* Also available as dorzolamide/timolol combination (Cosopt)

**DOXAPRAM**  (Dopram-V)

*Use:* Respiratory stimulant

*Dose Form:* Inj: 20 mg/ml, 20 ml vial

*Dose:* 
- H: 0.2 - 0.5 mg/kg, IV  
- D,C: 1 - 5 mg/kg, IV

B,Ll,Sh,Sw: 0.5 mg/kg IV or under the tongue
DOXORUBICIN  
(Adriamycin)

**Use:** Antineoplastic agent

**Dose Form:** Inj: 2 mg/ml, 100 ml vial

**Dose:**
- D: 30 mg/m² IV repeated every 2 – 3 weeks to an accumulated dosage of 200 mg/m²
- C: 15 - 20 mg/m² every 3 weeks

DOXYCYCLINE  
(Vibramycin)

**Use:** Long acting broad spectrum tetracycline

**Dose Form:** Oral: 100 mg cap, 50 mg tablets, powder for equine doses Solutions often compounded

**Dose:**
- D, C: 5 mg/kg (2.3 mg/lb) daily to bid, PO
- H: 10 mg/kg q12h
- Avian: 22 mg/kg (10 mg/lb) bid, PO

EAR CLEANSER

**Use:** Aural cleanser

**Dose Form:** Otic: 4 oz bottle (Epi-Otic Advanced, DuoxoMicelar, Malacetic

**Dose:**
- D, C: 5 - 15 drops/ear bid

EDETATE DIPOTASSIUM  
(EDTA Dipotassium)

**Use:** Chelating agent

**Dose Form:** Ophth: 1.38% in Artificial Tears, 16 ml btl (compounded)

**Dose:**
- 1 drop tid to qid

EDROPHONIUM CHLORIDE

**Use:** Diagnostic aid for myasthenia gravis

**Dose Form:** Inj: 10 mg/ml, 15 ml vial

**Dose:**
- D: 0.1 - 0.2 mg/kg IV
- H: 0.5 mg/kg IV slowly for reversing atracurium

**Note:** Do not exceed 2 mg total dose for dogs. Have atropine present.
**ELECTROLYTES, ORAL**

**Use:** Electrolyte replacement

**Dose Form:** Oral powder for dilution: 330 Gm (Oral Lytes 5) - when diluted with 5 gallons of water each liter will contain:
- Na 120 Meq, K 77 mEq, Cl 147 mEq, acetate 50 mEq.

**Dose Form:** Oral pwd for dilution: 800 Gm btl (Calf quencher) 80 Gm (approx. 1/3 cup) mixed with one liter of water will contain approximately the following mEq: Na 134, K 22.8, Mg 6.6, HCO₃ 81, Cl 75.8 with dextrose 6.8%.

**Dose:** Calves: 1 liter per 60 lbs body weight 3 to 4 times daily (Calf quencher)

**EMODEPSIDE/PRAZIQUANTEL**

(Profender)

**Use:** Parasiticide

**Dose Form:** Topical 7.5mg/30mg, 15mg/60mg, 24mg/96.1mg

**Dose:**

<table>
<thead>
<tr>
<th>Weight</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2-5.5 lbs</td>
<td>7.5 mg Emodepside/30.0 mg Praziquantel(0.35 ml),</td>
</tr>
<tr>
<td>&gt;5.5-11 lbs</td>
<td>15.0 mg Emodepside/60.0 mg Praziquantel (0.70ml),</td>
</tr>
<tr>
<td>&gt;11-17.6 lbs</td>
<td>24.0mg Emodepside/96.1mg Praziquantel(1.12ml)</td>
</tr>
<tr>
<td>&gt;17.6 lbs</td>
<td>Should be treated with the appropriate combination of tubes</td>
</tr>
</tbody>
</table>

**Note:** Usually a one time dose

Minimum dose is 1.36mg/lb (3 mg/kg) emodepside + 5.45 mg/lb 12mg/kg

**ENALAPRIL**

(Enacard, Vasotec)

**Use:** ACE inhibitor, Congestive Heart Failure

**Dose Form:** Oral: 2.5, 10 mg tablets

**Dose:**

<table>
<thead>
<tr>
<th></th>
<th>D: 0.25 mg - 0.5 mg/kg daily to bid, PO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C: 0.25 - 0.5 mg/kg q 12 to 24 hrs, PO</td>
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</tbody>
</table>
ENROFLOXACIN  
(Baytril)

**Use:** Broad spectrum antibacterial (Fluoroquinolone)

**Dose Form:**
- **Inj:** 22.7 mg/ml, 20 ml (for small animals)
  100 mg/ml, 100 ml (for food animals)
- **Oral:** 22.7, 68, 136 mg chewable tablets

**Dose:**
- **D,C:** 5 mg/kg daily, PO or IM
  - Dose may be increased up to 20 mg/kg daily depending upon infection and/or situation.
  - Daily dose may be divided and given bid.
- **H:** 5 mg/kg daily, IV
- **B:** 7.5 - 12.5 mg/kg as a single dose or 2.5 - 5.0 mg/kg daily 3 - 5 days, SQ

**Note:** Food animal injectable form is not to be used on small animals. Use restricted for beef cattle or female dairy cattle <20 months of age respiratory disease. Extra label use (dosage, species, or indication) in food animal species is illegal. Labeled meat withdrawal 28 days

EPHEDRINE

**Use:** Vasopressor

**Dose Form:**
- **Inj:** 50 mg/ml, 1 ml amp

**Dose:**
- **H:** 0.03 mg/kg (0.01 mg/lb), IV

EPINEPHRINE  
(Adrenalin)

**Use:** Cardiac resuscitation, Acute allergic reactions

**Dose Form:**
- **Inj:** 1:1000 soln, 30 ml vial

**Dose:**
- **H:** 4 - 8 ml, 1:1000 soln, IM or SQ
- **D,C:** 0.02 mg/kg IV or intratracheal for cardiac arrest
  - May increase to 0.2 mg/kg if no response initially
  - 0.01 to 0.02 mg/kg IV for hypersensitivity reaction
- **B,Li,Sh,Sw:** 1 ml/100lb BW, 1:1000 soln, IV, IM, or SQ for cardiac arrest. Can be used as a tocolytic to relax the uterus during correction of dystocia.

ERYTHROMYCIN

**Use:** Macrolide antibiotic

**Dose Form:** Ophthalmic oint 3.5 gm

ESTRIOL  
(Incurin)

**Use:** estrogen responsive urinary incontinence

**Dose Form:** 1 mg tablets

**Dose:** D: 2 tablets every 24 hours for 14 days. Reduce dose by 0.5 mg increments for 7 day periods to lowest effective dose.
ETOMIDATE
Use: Anesthesia, Hypnotic
Dose Form: Inj: 2 mg/ml, 20 ml vial
Dose: D, C: 1 mg/kg IV

FAMCICLOVIR
Use: Antiviral (feline herpes FHV-1)
Dose Form: 250 mg tablets
Dose: C: 125 mg (1/2 tablet) PO BID-TID

FAMOTIDINE
(Pepcid AC)
Use: H2-receptor antagonist
Dose Form: Inj: 10 mg/ml, 2 ml vial
Oral: 10 mg tabs
Dose: D, C: 0.5 - 1 mg/kg daily or BID, PO, SQ or IV
H: 1.88 mg/kg q 8 h or 2.8 mg/kg q 12 h, PO

FAT EMULSION
(Intralipid)
Use: IV nutrition
Dose Form: Inj: 20%, 250 ml bag
Note: 200 Calories per 100 ml

FATTY ACIDS
(Derma 3, Wellactin)
Use: Fatty Acid Supplement oral;
Topical supplement with ceramides
Dose Form: Oral: caps: Small, Medium & Large Dog Sizes
liquid: 8 and 16 oz bottles
Dose: D: caps: 1 to 2 daily
Up to 30 lbs, Small Dog Size
30 to 60 lbs, Medium Dog Size
60 to 90 lbs, Large Dog Size
liquid: dosed by pump dispenser, 1/2 pump < 20 lbs
then increase by 1 pump per 20 lbs
**FENBENDAZOLE**
(Panacur)

**Use:** Parasiticide

**Dose Form:** Oral: 10% susp, 1000 ml bottle, Panacur C- granules

**Dose:**
- **H:** 5 mg/kg (2.3 mg/lb) for small and large strongyles, pinworms
- 10 mg/kg (4.6 mg/lb) for control of ascarides
- **L:** 11 – 15 mg/kg daily for one to three days, PO
- **D:** 50 mg/kg (22.7 mg/lb) daily for 3 days, PO
  - For whipworms, re-treat in 3 weeks and again in 3 months
  - For giardia 50 mg/kg for 5 days.
  - 2 gram packets treats 20 lb (3 packets/box)
  - 4 gram packets treats 40 lb (3 packets/box)
- **C:** 50 mg/kg daily for 3 days, PO

**Note:** If you don’t know how many mgs per ml 10% is, it is time to turn to the index and learn how to calculate that it is 100 mg/ml.

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**FENTANYL**
(Sublimaze)

**Use:** Narcotic analgesic

**Dose Form:** Inj: 0.05 mg/ml, 5ml amp, 20 ml vials

**Dose:**
- **D:** 4 mcg/kg (1.9 mcg/lb) IV
  - 2 - 4 mcg/kg/hr constant rate infusion
  - 4 - 10 mcg/kg (1.8 - 4.5 mcg/lb) SQ or IM

  Total dose not to exceed 500 mcg (0.5mg) per dog.
  - 2.5 mg patch for 10 to 25 lb dog, 5mg patch for 26 to 50 lb,
  - 10 mg patch over 75 lbs transdermal (Use combination of patches when appropriate.)

**Note:** Controlled Substance - Schedule II

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**FIPRONIL and METOPRENE**
(Frontline Plus)

**Use:** Parasiticide

**Dose Form:** Topical:
- Spray 0.29%, 250 ml btls just fipronil
- Soln (fipronil 9.8% and methoprene 8.8%):
  - 0.5, 0.67, 1.34, 2.68 and 4.0 ml pipettes
    - (6 pipettes/packet)

**Dose:**
- **C:** 0.5 ml every month
- **D:** 0.67 ml for dogs up to 22 lbs every month
  - 1.34 ml for dogs 23 to 44 lbs every month
  - 2.68 ml for dogs 45 to 88 lbs every month
  - 4.0 ml for dogs 89 to 132 lbs every month
  - For dogs over 132 lbs use appropriate combination.

**Note:** Apply solution to skin, not hair coat.
**FIROCOXIB**
(Equioxx) (Previcox)

- **Use:** Analgesic, anti-inflammatory
- **Dose Form:**
  - Equine: 0.82% paste 6.93gm tube, 20 mg/ml IV injection
  - Canine: 57mg and 227mg chewable tablet
- **Dose:**
  - H: Loading dose 0.3mg/kg day 1 then give 0.1mg/kg once daily for up to 14 days
  - 0.09 mg/kg IV q 24 h up to 5 days
  - D: 5mg/kg q 24h

**FLORFENICOL**
(Nuflor)

- **Use:** Antibiotic
- **Dose Form:**
  - Inj: 300 mg/ml, 100 ml vial
- **Dose:**
  - B: 20 mg/kg, IM followed by a second dose 48 hours later
  - 40 mg/kg, SQ as single injection
- **Note:** Give only in neck musculature, not more than 10 ml/site
  - Label meat withdrawal IM 28 days, SQ 38 days

**FLUCONAZOLE**

- **Use:** Triazole antifungal
- **Dose Form:**
  - Oral: 100 mg tabs
- **Dose:**
  - D: 2.5-5 mg/kg q24 h, PO
  - C: 2.5-10 mg/kg q24h, PO
  - Avian: 5 -10 mg/kg q24h, PO

**FLUDROCORTISONE**
(Florinef)

- **Use:** Mineralocorticoid
- **Dose Form:**
  - Oral: 0.1 mg tab
- **Dose:**
  - D: 0.015-0.02 mg/kg/day or divided bid
  - 0.2 - 0.8 mg daily, PO
  - C: 0.1 - 0.2 mg daily, PO

**FLUORESCEIN SODIUM**

- **Use:** Diagnostic, Keratitis, Retinitis
- **Dose Form:** Ophth Strips: 9 mg/strip, 100 strips/box (Fluorets)

**FLUOXETINE**

- **Use:** (SSRI) antidepressant, anti-anxiety
- **Dose Form:** oral: 10 mg tablets, 20 mg capsules
- **Dose:**
  - D: 1 - 2 mg/kg, PO q 24h
  - C: 0.5 – 1.5 mg/kg, PO q 24h
FLUMAZENIL  
(Romazicon)  
**Use:** Benzodiazepine reversal agent  
**Dose Form:** Inj. 0.1 mg/ml  
**Dose:** D: 0.01 mg/kg, IV (may need to repeat dose)

FLUNIXIN  
(Banamine, Flunixamine)  
**Use:** Anti-inflammatory, Analgesic agent  
**Dose Form:** Inj: 50 mg/ml, 100 ml vial  
Oral: 1.5 Gm paste syringe  
**Dose:** H: 1.1mg/kg daily, SQ, IM, or IV or 0.5 mg/lb daily, PO  
B,L: 1.1 to 2.2 mg/kg (0.5 to 1 mg/lb) daily, SQ, IM or IV  
**Note:** Paste syringe calibrated in 125 mg/250 lbs (body wt.) increments  
Withdrawal time: Meat 4 days; Milk 72 hrs for IV  
Withdrawal time: Meat 10 days; Milk 120 hrs for SQ,IM

FLURALANER  
(Bravecto)  
**Use:** Parasiticide  
**Dose Form:** Oral chewable tablets 112.5mg, 250mg, 500mg, 1000mg, 1400mg  
**Dose:** Oral [Minimum dosage of 11.4 mg/lb (25 mg/kg) once every 3 months]  
4.4-9.9 lbs: 112.5 mg (one tab)  
>9.9-22.0 lbs: 250 mg (one tab)  
>22.0-44.0 lbs: 500 mg (one tab)  
>44.0-88 lbs: 1000 mg (one tab)  
>88.0-123.0 lbs: 1400 mg (one tab)  
Over 123.0 lbs: Administer the appropriate combination of chewables  
**Give with food**  
**Note:** Not for puppies less than 6 months. Must weigh at least 4.4 lbs.

FLURBIPROFEN  
(Ocufen)  
**Use:** Ophthalmic NSAID  
**Dose Form:** Ophth: 0.03% soln, 5 ml  
**Dose:** 1 drop tid
FUROSEMIDE
(Lasix, Salix)

Use: Diuretic
Dose Form:

- Inj: 50 mg/ml, 100 ml vial
- Oral: 12.5, 50 mg tabs
  10 mg/ml soln, 60 ml

Dose:

- H,B: 0.5 to 1 mg/kg (0.27 - 0.45 mg/lb), IM or IV
  2.2 - 4.5 mg/kg daily, PO
- D,C: 1 - 2 mg/kg (0.45 - 0.9 mg/lb), IM or IV
- D: 2.2 - 4.5 mg/kg (1 - 2 mg/lb) daily to bid, PO
- C: 2.2 mg/kg (1 mg/lb) daily to bid, PO

GABAPENTIN
(Neurontin)

Use: Anticonvulsant, adjunct pain management
Dose Form: 100, 300mg caps, 25 and 50 mg capsules commonly compounded

Dose:

- D,C: 2.5 - 5 mg/kg, tid PO (for pain adjunct)
  8 - 10 mg/kg, bid to tid PO (for seizures)

GENTAMICIN
(Gentocin)

Use: Aminoglycoside antibiotic
Dose Form:

- Inj: 100 mg/ml, 100 ml vial
- Ophth oint: 0.3%, 3.5 Gm tube
- Ophth soln: 0.3%, 5 ml bottle

Dose:

- D, H: 6.6 mg/kg as a single daily dose IM, IV or SQ

Note: If given IV, administer slowly
Extralabel use in food animal, suggested withdrawal Meat: 18 months; Milk: 120 hrs
GLUCOSAMINE - CHONDROITIN
(Cosequin)

Use: Nutraceutical for joint health

Dose Form: Combination, chewable tabs and plain caps, for dogs with 500 mg glucosamine HCl and 400 mg chondroitin. Combination capsule (to sprinkle on food) for cats with 125 mg glucosamine HCl and 100 mg chondroitin. Combination powder for horses with 1800 mg glucosamine HCl and 600 mg chondroitin per scoopful (3.3 Gm).

Dose:
D: Initial treatment (daily dose): 1 tab/10-24 lb, 2 tabs/25-49 lbs, 3 tabs/50-100 lbs & 4 tabs/101 lbs or greater.
Maintenance: above dose may be reduced by 1/2 and given once daily or further reduced to every other day.

C: Initial treatment (daily dose): 1 cap if under 10 lbs, 2 caps if 10 lbs or greater.
Maintenance: Reduce above dose by 1/2 or give every other day.

H: Initial treatment: 3 scoopfuls BID x 4 weeks PO.
Transition period: 2 scoopfuls BID x 3 weeks PO.
Maintenance: 1 scoopful BID (May double dose during heavy training and competition.)

Note: For cats and horses, sprinkle on food.

Glucosamine-Chondroitin/Avocado/Soybean
(Dasuquin)

Use: Joint health supplement

Dose Form: Combination chewable tablets for large dogs (60-120 pounds) Glucosamine 900mgs, Chondroitin 350mgs, and Avocado/Soybean 90mgs. Combination chewable tablets for small dogs (up to 59 pounds) Glucosamine 600mgs, Chondroitin 250mgs, and Avocado/Soybean 45mgs.

Dose: Large dogs 60-120 pounds: initial 4-6 week period give 2 tablets per day then go to a maintenance dose of 1 tablet per day.
Small dogs: initial 4-6 weeks maintenance

<table>
<thead>
<tr>
<th>Tablets/day</th>
<th>10-29 lbs</th>
<th>30-59 lbs</th>
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</thead>
<tbody>
<tr>
<td>Under 10 lbs</td>
<td>1/2</td>
<td>1/2</td>
</tr>
<tr>
<td>10-29 lbs</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>30-59 lbs</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Feline formula 125 mg Glucosamine HCl, 100 mg Chondroitin, and Avocado/Soybean 25 mg.
Feline under 10 lbs 1 capsule daily over 10 lbs 2 daily.
Capsules may be sprinkled of food.
GLYCERIN
Use: Emollient, Systemic osmotic agent
Dose Form: Oral liquid, pint
Dose: 1 - 2 ml/kg (0.5 - 1 ml/lb) bid to tid

GLYCOPYRROLATE
(Robinul-V)
Use: Anticholinergic
Dose Form: Inj: 0.2 mg/ml, 2 ml vial
Dose: D: 11 mcg/kg (5 mcg/lb), IM, IV or SQ

HEPARIN SODIUM
Use: Anticoagulant in vivo and in vitro
Dose Form: Inj: 1000 Units/ml, 10 ml vial
Dose: 2 Units/ml intraocular irrigation
1 - 2 Units/ml for heparinized saline
D: 300 Units/kg IV bolus, 600 Units/kg/day constant rate infusion

HETASTARCH
Use: Plasma volume expansion
Dose Form: Inj: 6% in Normal Saline, 500 ml

HISTAMINE PHOSPHATE
Use: Diagnostic aid
Dose Form: Inj: 2.75 mg/ml, 1 ml amp (1 mg histamine base per ml)

HYALURONATE, SODIUM
Use: Synovitis/Osteoarthritis
Dose Form: Inj: 10 mg/ml, 2 ml & 4 ml vials (Legend)
11 mg/ml, 2 ml syringe (Hyvisc)
Dose: H: 10 - 20 mg intra-articularly or 40 mg (Legend) IV once weekly for a total of 4 treatments.

HYDROCODONE/HOMATROPINE
Use: Antitussive
Dose Form: Oral: Hydrocodone 5 mg/1.5mg Homatropine tablet and oral liquid 5mg
Hydrocodone/1.5mg Homatropine/5ml
Dose: D: 0.22 mg/kg (of hydrocodone) bid to tid
Note: Controlled Substance - Schedule II. Dose according to Hydrocodone

HYDROCORTISONE
Use: Corticosteroid therapy
Dose Form: Topical: 1% Astringent spray (DermaCool-HC), 4 oz btl
1% Resicort conditioner
HYDROGEN PEROXIDE

Use: Antiseptic
Dose Form: 3% soln, pint

HYDROMORPHONE

Use: Narcotic analgesic
Dose Form: Inj: 2 mg/ml, 1 ml vial and 20 ml vial
Dose: D: 0.05 - 0.2 mg/kg, SQ, IM every 3 to 4 hours
       0.05 - 0.1 mg/kg, IV
       C: 0.025 - 0.1 mg/kg, SQ, IM
       0.01 - 0.025 mg/kg, IV
Note: Controlled Substance - Schedule II

HYDROXYZINE PAMOATE
(Atarax, Vistaril)

Use: Antihistamine, Antipruritic
Dose Form: 10 mg tab, and 25 mg and 50 mg caps
Dose: D: 2.2 mg/kg bid to tid, PO
       H: 1 - 1.5 mg/kg bid to tid, PO

INSULIN

Use: Diabetes mellitus, Hyperkalemia
Dose Form: Inj: 100 Units/ml, 10 ml; Plain crystalline regular
         40 Units/ml, 10 ml;(ProZinc) PZI (feline)
         40 Units/ml, 10ml; Vetsulin (canine/feline)
         100 Units/ml, 10 ml; NPH
         100 Units/ml, 3 ml; Glargine (Lantus)
Dose: 0.5 - 1 Units/kg (0.23 - 0.45 Units/lb) of regular insulin SQ,
       then adjust dosage to clinical response
B,Ll,O: 0.4 - 1 Units/kg SQ q12-24h for long acting insulin
       0.4 to 1 Units/kg regular insulin IV as a total daily dose by CRI

IRON DEXTRAN

Use: Injectable hematinic
Dose Form: Inj: 100 mg iron/ml, 100 ml vial
Dose: H,B,Sh: 2.2 mg/kg (1 mg/lb), IM
       Piglets: 200 mg IM, repeat in 10 to 14 days (treatment)
       100 - 150 mg IM, from 1 to 3 days of age (prevention)
       D,C: 11 - 22 mg/kg (5 - 10 mg/lb)

ISOFLURANE
(Aerrane, Forane, IsoFlo)

Use: Inhalant anesthetic
Dose Form: Liquid for anesthesia, 100 ml bottle
ISOXSUPRINE

Use: Vasodilation
Dose Form: Oral: 20 mg tab
Dose: H: 1.32 mg/kg (0.6 mg/lb) or for 1000 lb horse approximately:
30 tabs bid x 21 days then 30 tabs daily x 14 days
then 30 tabs qod x 7 days [Give on empty stomach (1 hr before feeding)]

ITRACONAZOLE
(Sporanox)

Use: Systemic antifungal
Dose Form: Oral: 100 mg capsules and 10 mg/ml soln
Dose: D, C, Birds: 5 - 10 mg/kg daily, PO

IVERMECTIN

Use: Parasiticide

Equine:
Dose Form: Oral paste: 1.87%, 6.08 Gm syringe (Eqvalan)
1.87% with 14.03% praziquantel syringe (EquiMax)
Oral soln: 10 mg/ml, 100 ml
Dose: 0.2 mg/kg (0.09 mg/lb) (one 6.08 Gm paste syringe per 1250 lbs)

Bovine/Swine:
Dose Form: Inj: 10 mg/ml, 50 ml vial (Ivomec)
Dose: B,Ll,SH: 0.2 mg/kg (0.09 mg/lb) SQ as a single dose
Sw: 0.3 mg/kg (0.135 mg/lb) SQ as a single dose

Canine:
Dose Form: (Bovine Ivomec used orally): 10 mg/ml, (usually dispensed in individual oral syringes)
Dose: Microfilaricide: 50 mcg/kg (22.7 mcg/lb) once, PO or SQ
Sarcoptes Treatment: 0.3 mg/kg every week for 4 weeks, PO or SQ
Nasal Mite: 100 - 300 mcg/kg weekly, PO for 1 to 3 treatments
Heartworm prevention: See Ivermectin/Pyrantel entry below
Demodicosis: 300 mcg/kg daily for 8 weeks past the first negative scraping.
Note: Before using the 300 mcg/kg dose one may want to test for sensitivity by giving 50 mcg/kg on day 1, 100 mcg/kg on day 2, 150 mcg/kg on day 3. The Collie is susceptible to ivermectin toxicity, especially to doses of 100 mcg/kg or greater. Adverse effects include tremors, lethargy, ataxia and mydriasis. Stop treatment if such are seen.

Feline: Dose: 200 mcg/kg PO or SQ
IVERMECTIN and PYRANTEL  
(Heartgard Plus, Tri-Heart Plus)

**Use:** Heartworm preventative/ parasiticide

**Dose Form:** Oral: 68 mcg/57 mg, 136 mcg/114 mg, 272 mcg/227 mg tabs of ivermectin/pyrantel (Sold only in packets of 6 tabs)

**Dose:** Heartworm Prevention:
- Minimum 6 mcg/kg ivermectin once monthly
- Suggested schedule:
  - Up to 25 lbs 68 mcg/57 mg
  - 26 to 50 lbs 136 mcg/114 mg
  - 51 to 100 lbs 272 mcg/227 mg
  - over 100 lbs use combination of strengths.

**Note:** Therapy must be started within one month of exposure. Final dose must be given within 30 days after the last exposure. If interval between doses is greater than 45 days, re-testing is necessary.

KAOLIN/PECTIN

**Use:** Anti-diarrheal

**Dose Form:** Oral Susp: gal

**Dose:**
- H: 2 - 4 quarts per 1000 lb bid, PO
- Foals: 3 - 4 oz q6-8h, PO
- B,L,I,Sh:
  - Adults: 4-8 ml/kg PO q24h or divided daily for gastric ulcers or other hemorrhagic GI disease.
  - Neonates: 0.2 to 0.5 ml/kg PO q 6-24h for treatment of suspected GI ulcers or enteritis.
- D,C: 1 - 2 ml/kg q2-6h, PO

KETAMINE
(Ketaset, Ketaved, Vetalar)

**Use:** Neuroleptoanalgesia

**Dose Form:** Inj: 100 mg/ml, 10 ml vial

**Dose:**
- H: 2 mg/kg IV, 5 minutes following 1 mg/kg IV Xylazine
- B,L,I,Sh: 2-5 mg/kg IV at least 5 minutes following sedation
- Sw: 6 - 11 mg/kg IM after or in conjunction with sedative/tranquilizer
- D: 10 - 21 mg/kg (4.5 - 9.5 mg/lb), IM
  - 2.2 - 4.4 mg/kg (1 - 2 mg/lb), IV
  - 2 mcg/kg/minute, CRI
- C: 6 - 10 mg/kg (2.7 - 4.5 mg/lb), IV
  - Restraint: 11 mg/kg (5 mg/lb), IM
  - Anesthesia: 22 - 33 mg/kg (10 - 15 mg/lb), IM
- Rabbits: 15 mg/kg (7 mg/lb)

**Note:** In horses, use only in conjunction with xylazine. Controlled Substance - Schedule III.

Extralabel suggested withdrawal time; Meat: 3 days; Milk: 48 hrs.
KETOCONAZOLE

Use: Antifungal
Dose Form:
Oral: 200 mg tab
Topical: Shampoo (Mal-a-Ket); Malaket wipes
Ear Flush: (Mal-a-Ket Plus Triz EDTA)

Dose:
D, C: 10 mg/kg (4.5 mg/lb) daily with food or 5 mg/kg (2.25 mg/lb) bid for antifungal
D: 5 - 10 mg/kg q 12 h for dermatophytosis
D: 30 mg/kg divided bid to tid for hyperadrenocorticism
H: 10 mg/kg (4.5 mg/lb) daily or bid

KETOPROFEN
(Ketofen)

Use: Anti-inflammatory
Dose Form:
Inj: 100 mg/ml, 100 ml vial

Dose:
H: 2.2 mg/kg once daily, IV
D, C: 1 mg/kg single dose post surgical
B, L, I, O: 2.2 -3.3 mg/kg
Suggested withdrawal Meat: 3 days; Milk: 24 hrs.

LACTULOSE

Use: Treat and prevent hepatic encephalopathy (HE), stool softener
Dose Form:
Oral: 667 mg/ml syrup, 16 oz

Dose:
D: 20 - 30 Gm (30 - 45 ml) tid (HE)
For stool softener 1ml/4.5 kg q 8 h, then adjust
C: 0.5 - 1 ml qid (HE)
2 ml tid then adjust to produce soft stools

LEFLUNOMIDE
(Arava)

Use: Immune Modulating Agent
Dose Form:
oral 10 & 20 mg tablets

Dose:
D: 2 - 6 mg/kg q 24h; maintain plasma level of 20 mcg/ml

LEVETIRACETAM

Use: anticonvulsant
Dose Form:
250mg and 750 mg tablets also 500 & 750 mg ER, 100 mg/ml Inj. 5 ml vial
100 mg/ml oral liquid

Dose:
D, C: Loading dose 60mg/kg IV over 15 minutes
D: Maintenance dosing 20-30mg/kg tid for regular release,
or 20-30mg/kg bid for extended release formulation
C: Maintenance dosing 20-30mg/kg tid regular release
LEVOTHYROXINE
(Soloxine, Synthroid, Thyroxine)
Use: Hypothyroidism
Dose Form: Oral: 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 1 mg tabs
Dose: D: 0.022 mg/kg (0.01 mg/lb) BID, PO

LIDOCAINE
(Xylocaine)
Use: Local and topical anesthetic, Antiarrhythmic
Dose Form: Inj: 2%, 50, 100 and 250 ml vial
Oral topical: 2% (Viscous), 100 ml
Topical gel 2%, 30 ml tube
Dose: D: 2 - 5 mg/kg IV bolus administered over 2 to 3 minutes
50 - 120 mcg/kg/min constant rate infusion
B, LI, Sh: As an intestinal prokinetic and abdominal analgesic
Loading Bolus: 1.2 mg/kg
CRI at 50 ug/kg/min
Note: Use caution. Start CRI at 60 mcg/kg/min and increase by 10 mcg
increments every two hours if no or minimal response is noted
Suggested withdrawal: Meat: 1 day; Milk: 24 hrs.

LOMUSTINE
(CeeNU, CCNU)
Use: Mast cell lymphoma
Dose Form: Oral: 10 and 40 mg caps
Dose: D: 60 – 90 mg/m² every 3 weeks
Note: Readjust subsequent doses according to platelet and leukocyte counts

L-LYSINE
Use: Prevent or reduce feline herpes virus, ocular infections
Dose Form: Oral: Powder, also available as oral paste (Enisyl-F)
Dose: C: 500 mg PO BID for life

LOSARTAN
Use: Angeotensin receptor blocker (ARB)
Hepatic fibrosis, portal hypertension, hypertension
Dose form: 50 mg tablets; compounded to required dose.
Dose: D: 0.5 mg/kg q 24h

LUBRICATING JELLY
(K-Y Jelly, Surgilube)
Use: Lubricant
Dose Form: Topical: 3 Gm foilpac, 120 Gm tube
**MAGNESIUM CHLORIDE**

*Use:* Electrolyte Suppliment, Chemical Defibrillator

*Dose Form:* Inj. 200mg/ml  50ml vial

*Dose:* D,C  2Gm infused over 1-2 minutes to effect

**MAGNESIUM HYDROXIDE**

*Use:* Antacid, Cathartic

*Dose Form:* Oral pwd:  360 Gm/lb (Calf Quencher)

*Dose:* B:  360 Gm
Sh,Calves: 36 - 72 Gm
D,C:  0.5 - 1.0 ml/kg Maalox susp q 2 h

**MAGNESIUM SULFATE**

(Epsom Salts)

*Use:* Saline cathartic, Hypomagnesemia

*Dose Form:* Inj. 50%, 20ml vial
Crystals, bulk

*Dose:* H:  250 - 1000 Gm, PO

B,LI,Sh: 0.5 to 1 g/kg PO (dissolved in water) once daily
Sh,Sw: 25 - 125 Gm, PO
D:  5 - 25 Gm, PO
C:  2 - 5 Gm, PO

B,LI,O: 1 GM/kg, PO intestinal osmotic cathartic

Note: Hypermagnesemia induced sedation and weakness can occur with repeated use.

**MANNITOL**

(Osmitrol)

*Use:* Osmotic diuretic

*Dose Form:* Inj:  25%, 50 ml single dose vial

*Dose:* 0.5 - 1.0 Gm/kg (0.23 - 0.45 Gm/lb), IV

*Note:* Examine vial closely for crystals

**MARBOFLOXACIN**

(Zeniquin)

*Use:* Broad spectrum antibacterial (fluroquinolone)

*Dose Form:* 25 & 100 mg tabs

*Dose:* D:  2.75 - 5.5 mg/kg once daily PO

**MAROPITANT**

(Cerenia)

*Use:* Antiemetic

*Dose Form:* injectable 10mg/ml and oral tablets  16mg, 24mg, 60mg, 160mg

*Dose:* D: acute vomiting
1mg/kg SQ once daily for up to 2 days
Oral dose 2 mg/kg once daily for up to 5 days.
Motion sickness 8mg/kg orally once daily for up to 2 days

**NOTE:** Do not use in puppies less than 11 weeks; it could cause bone marrow hypoplasia
MECLIZINE
Use: Antiemetic (related to labyrinthitis)
Dose Form: 25 mg tabs
Dose: D: 25 mg/dog once daily
C: 6.25 – 12.5 mg/cat once daily
H: 1 - 4 mg/kg once daily (1 mg/kg usually effective)

MELARSOMINE
(Immiticide)
Use: Heartworm adulticide treatment
Dose Form: Inj: 50 mg vial (powder to be mixed with 2 ml sterile water yielding 25 mg/ml)
Dose: D: Heartworm burden must be assessed. For good to fair prognosis, 2.5 mg/kg twice 24 hours apart. For guarded prognosis, 2.5 mg/kg as a single dose followed 30 days later by 2.5 mg/kg twice 24 hours apart.
Note: Must be given by deep intramuscular injection in the epaxial musculature (3rd through 5th lumbar region only). For very guarded prognosis melarsomine is contraindicated.

MELOXICAM
(Meloxicam)
Use: Analgesic, Anti-inflammatory
Dose Form: Oral liquid 1.5 mg/ml (honey flavored)
Sln. for Inj. 5 mg/ml, 10 ml vial 15 mg tablet
Dose: D: 0.2 mg/kg PO,IV,SQ once
0.1 mg/kg PO,IV,SQ q 24 hours
C: 0.1mg/kg IV one time dose
Note: Black box warning for oral use in feline.
Rabbit: 0.5 mg/kg BID
Avian: 0.5 mg/kg BID
B: 1 mg/kg PO day 1, then 0.5 mg/kg q24h for 5 days. Reduce thereafter to 0.5 mg/kg PO q48h for long term use.
Sheep: 1 mg/kg PO q24h for 2-3 days then q48h.
Goats: 1-2 mg/kg PO q24h
LI: 1 mg/kg PO q48h
Note: Bovine recommended withdrawal of 120 h milk and 30 days for meat.

MEPIVACAINE
(Carbocaine)
Use: Local anesthetic
Dose Form: Inj: 20 mg/ml, 50 ml vial
METHADONE

Use: Analgesic
Dose Form: 10 mg/ml, 1 and 20 ml vials
Dose: D: 0.5 – 1 mg/kg SQ

0.1 – 0.5 mg/kg IV
C: 0.2 – 0.5 mg/kg SQ

0.1 – 0.2 mg/kg IV
Note: Controlled Substance - Schedule II

METHIMAZOLE

(Tapazole)

Use: Antithyroid agent
Dose Form: Oral: 5 and 2.5 mg tablet
Dose: C: 2.5 mg/cat BID to start. May increase up to 5 mg tid for two weeks. Reduce dose if euthyroid.
Note: Commonly compounded as transdermal gel

METHOCARBAMOL

(Robaxin)

Use: Skeletal muscle relaxant
Dose Form: 500 & 750 mg tabs
Dose: D, C: 45 mg/kg tid the first day then 20 to 40 mg/kg tid
D: 15-20mg/kg tid for muscle spasms associated with IVDD
H: 8.8 to 66 mg/kg up to tid

METHYLPRÉDNSOLONE

(Depo-Medrol)

Use: Corticosteroid therapy
Dose Form: Inj: 20 mg/ml, 10 ml vial

40 mg/ml, 5 ml vial
Dose: D: 1.1 mg/kg (0.5 mg/lb), IM or SQ
C: 5.5 mg/kg (2.5 mg/lb) to maximum of 20 mg per cat, IM or SQ

METHYLPRÉDNSOLONE SODIUM SUCCINATE

(Solu-Medrol)

Use: Corticosteroid therapy
Dose Form: Inj: 500 mg vial (125 mg/ml when reconstituted with 4 ml of sterile diluent. Use within 48 hrs after mixing.)
Dose: D: 30 mg/kg IV. May repeat in 6 hours.
Emergency: 30 mg/kg IV within 8 hrs of CNS injury followed either by a 5.4 mg/kg/hr CRI for 24 - 48 hrs (preferable) OR 15 mg/kg as an IV bolus at 2 hrs and 6 hrs after the initial loading dose, and then 15 mg/kg IV qid for the next 24 to 48 hrs.
METOCLOPRAMIDE
(Reglan)

Use: Antiemetic, GI disorders

Dose Form:
- Inj: 5 mg/ml, 2 ml vial
- Oral: 10 mg tab, 1 mg/ml oral solution

Dose:
- D: 1 - 2 mg/kg/day constant rate infusion IV
- D,C: 0.2 - 0.4 mg/kg (0.1 - 0.2 mg/lb) tid, 1/2 hr before meals, PO,SQ or IM
- H: 0.06 mg/kg, SQ q 3 h
- B: 0.3 mg/kg, IM q 6 h to increase GI motility

METRONIDAZOLE
(Flagyl)

Use: Amoebiasis, Giardiasis, Trichomoniasis, Anaerobic infections

Dose Form:
- Inj: 5 mg/ml, 100 ml bag
- Oral: 250 & 500 mg tab, also compounded into suspension

Dose:
- D,C: 3 - 6 mg/kg q 8 h IV
  - 10mg/kg tid OR 15mg/kg bid
- H: 15 mg/kg bid to tid PO

CAUTION!!! Narrow margin of safety. Avoid over-dosing especially in larger dogs.

ILLEGAL in Food Animal Species including all cattle, sheep, goats, and swine.

MEXILETINE

Use: Ventricular Arrhythmias

Dose Form: 150 and 200 mg caps other strengths may be compounded

Dose:
- D: 4 - 8 mg/kg q 8 - 12 h PO

MICONAZOLE

Use: Antifungal

Dose Form:
- Topical: 1% lotion, 8 oz.bottle (Conzol)
  - EasOtic – in combination with hydrocortisone/gentamicin
Commonly used to compound ear drop combinations with dexametasone and/or enrofloxacin
MIDAZOLAM
(Versed)
Use: Short-acting sedative, Anesthetic adjunct
Dose Form: Inj: 5 mg/ml, 2 ml and 10 ml vials
Dose: D, C: 0.1 to 0.5 mg/kg IM, IV or SQ
B,Li,Sh,Sw: 0.1 to 0.5 mg/kg IM, IV or SQ
Note: Effects similar to diazepam, except midazolam is better absorbed SQ or IM and less irritating IV
Controlled Substance - Schedule IV

MILBEMYCIN
(Interceptor)
Use: Heartworm Prevention
Dose Form: 2.3, 5.75, 11.5, 23 mg tabs
Dose: Suggested schedule
Canine
Up to 10 lbs  2.3 mg Milbemycin
11 to 25 lbs  5.75 mg Milbemycin
26 to 50 lbs  11.5 mg Milbemycin
51 to 100 lbs  23.0 mg Milbemycin
Note: Do not use in dogs less than 4 weeks old

MILK REPLACEMENT
Use: Nutrition
Dose Form: Oral liquid
For Dog: 12 oz can (Esbilac)
Dose: 265 ml/kg (120 ml/lb) daily in divided portions
For Cat: 12 oz can (KMR)
Dose: Weight of kitten Total daily
3 oz  22 ml
4 oz  38 ml
6 oz  45 ml
12 oz  105 ml
Divide total daily dose per number of feedings.
Note: During the first week of a kitten's or puppy's life, administer only half of the above recommended dose.

MINERAL OIL
Use: Emollient cathartic, Protective, Lubricant
Dose Form: Liquid, gallon
Dose: H,B: 250 - 1000 ml
Sh: 25 - 150 ml

MINOCYCLINE
Use: Antimicrobial
Dose Form: Oral 75, 100mg capsules
Dose: D: 5 – 10 mg/kg bid
C: 5 – 10 mg/kg bid
E: 4mg/kg bid
MIRTAZAPINE
(Remeron)
Use: Appetite stimulant, control nausea
Dose Form: 15mg tablet, 1.87 mg capsules = (1/8 tablet) compounded
Dose: D&C: 0.6 – 1 mg/kg once daily
C: 1/8 tablet q 24h
E: 2mg/kg once to twice daily
NOTE: If 1/8 tablet is not effective you may increase to 1/4 tablet every 48 to 72 hours.
If liver or kidney disease give 1/8 tablet every other day

MISOPROSTOL
(Cytotec)
Use: Prevention of NSAID Induced Gastric Ulcers
Dose Form: 100 mcg (scored) tabs
Dose: D: 2 - 4 mcg/kg tid to qid, PO
H: 5 mcg/kg tid, PO
CAUTION!! Abortifaciant, see package insert

MITOXANTRONE
(Novantrone)
Use: Antineoplastic Agent
Dose Form: Inj: 2 mg/ml concentrate to be diluted for administration IV
Dose: D: 5.5 mg/m² every 3 weeks, IV
C: 6.5 mg/m² every 3 weeks, IV

MOMETASONE
(Mometomax, Posatex)
Use: Topical and Otic suspension combination products
Dose Form: Otic Suspension
Dose: 4 – 8 drops in affected ear once daily
MORPHINE

Use: Analgesic

Dose Form: Inj: 10 mg/ml, 1 ml ampule (preservative free)

Dose:

H: 100 - 250 mg

H & D: Epidural: 0.1 mg/kg (dogs use preservative free, horses use 15 mg/ml diluted to 20 ml with preservative free normal saline)

Ruminants: 0.1 mg/kg q 6 - 8 h, IV, IM, or SQ

B: Epidural: 0.1 mg/kg. Dilute with normal saline to a total volume of 0.04 ml per kg of body weight.
(14 day slaughter withdrawal)

D: 0.5 - 2 mg/kg (0.25 - 1 mg/lb), IM or SQ
   0.05 to 0.1 mg/kg (0.025 - 0.045 mg/lb)
   for pulmonary edema
   1.1 - 2.2 mg/kg, SQ, as an emetic in dogs

C: 0.1 mg/kg (0.045 mg/lb), IM or SQ
   0.5 to 1 mg/kg tid of oral soln. Begin with low dose.

Rabbits: 1 mg/kg (0.45 mg/lb)

Sw: 30 - 200 mg

Note: Controlled Substance - Schedule II

MUPIROCIN

Use: Topical antibiotic ointment

Dose Form: 2%, 22 Gm tube

Dose: D: Apply q 12h

MYCOPHENOLATE

Use: Immunosuppressive agent

Dose Form: 250 mg capsules, 50 mg capsules compounded
   500 mg vial for IV (Cellcept)

Dose: D: 12 -17 mg/kg PO. Given once daily or divided BID
   10 mg/kg q 12 H

Note: Given with prednisolone 2 mg/kg q 12-24h

N-BUTYLSCLOPOLAMMONIUM BROMIDE
(Buscopan)

Use: Antispasmodic

Dose Form: Inj: 20 mg/ml, 50 ml vial

Dose: H: 0.3 mg/kg IV slowly

Note: Should not be used in impaction colics associated with ileus, or in horses with glaucoma
NALOXONE

Use: Narcotic antagonist
Dose Form: Inj: 400 mcg/ml, 1 ml and 10 ml vial
Dose: D: 15 mcg/kg (6.8 mcg/lb)

Note: The half-life of naloxone is shorter than most of the narcotics. If it is used for reversal, animals must be watched carefully for returning signs of narcotic activity.

NEOMYCIN SULFATE
(Mycitracin)

Use: Gram negative infections. Drug of choice for Proteus.
Dose Form: Oral liquid: 200 mg/ml, 500 ml bottle (Biosol)

Ophth oint: 3.5 mg with bacitracin 400 Units and polymyxin B 5000 Units/Gm, 3.5 Gm tube (Neosporin, Triple Antibiotic)

3.5 mg with bacitracin 400 Units, polymyxin B 5000 Units and hydrocortisone 1% per Gm,

3.5 Gm tube (Cortisporin)

Ophth soln: 2.5 mg with gramicidin 0.025 mg, and polymyxin B 10,000 Units/ml, 3.5 ml btl (Triple Antibiotic)

Topical oint: 3.5 mg with bacitracin 400 Units and polymyxin B 5000 Units/Gm, 30 Gm tube (Triple Antibiotic)

Cream: 2.5 mg with nystatin 100,000 Units, thiostrepton 2500 Units and triamcinolone acetonide 1 mg/Gm in water washable base; 7.5 Gm tube (Panolog Cream)

Ointment: 2.5 mg with nystatin 100,000 Units, thiostrepton 2500 Units and triamcinolone acetonide 1 mg/ml in oil base;7.5 ml tube (Panolog Ointment,EnteDerm)

Dose: D,C: 20 mg/kg PO q 12h

NEOSTIGMINE

Use: Reversible anticholinesterase
Dose Form: Inj: 1 mg/ml, 10 ml vial
Dose: H,B: 1 mg/50 kg, IM or SQ
Sh: 0.022 - 0.033 mg/kg (0.01 - 0.015 mg/lb)
Sw: 0.04 - 0.06 mg/kg (0.018 - 0.027 mg/lb)

NIACINAMIDE

Use: Autoimmune disorders
Dose Form: Oral: 500 mg tablet
Dose: D: 250 mg bid for 7 days; then 250 mg tid for dogs less than 40 lbs. Double dose (500 mg) for dogs 40 lbs or more.

Note: Always use in combination with tetracycline.
NITENPYRAM
(Capstar)
Use: Parasiticide/insecticide
Dose Form: Oral: 11.4 mg & 57 mg tabs
Dose:
C: 2 - 25 lbs: 11.4 mg
D: 2 - 25 lbs: 11.4 mg
26-125 lbs: 57 mg
Note: Minimum dose is 1 mg/kg (0.45mg/lb) body weight. Do not administer to pets under 2 lbs. *No more than once a day*

NITROFURAZONE
(Furacin)
Use: Antibacterial
Dose Form: Dressing: 0.2%, 454 Gm jars
Note: ILLEGAL in all food animal species including cattle, sheep, goats, and swine.

NYSTATIN
(Panalog)
Use: Candidiasis
Dose Form: Ointment: 100,000 Units/Gm with neomycin, thioestrepton and triamcinolone in oil base, 7.5 ml tube (Panalog Ointment, Derma-4)

OCLACITINIB
(Apoquel)
Use: Control of atopic dermatitis
Dose Form: 3.6, 5.4 and 16 mg tablets
Dose: 0.4-0.6mg/kg bid x 14days, then q24h

OFLOXACIN
(Ocuflox)
Use: Fluoroquinolone antibiotic
Dose Form: Ophth soln: 0.3%, 5 ml bottle
Dose: D: 1 drop in eye(s) qid minimum. May be used every hour in severe cases.
Note: Reserve for severe ocular infections
OMEPRAZOLE
(Prilosec)
Use: Antisecretory compound
Dose Form: Oral: 20 mg sustained release caps
(Kremers-Urban brand 20 mg cap contains 18 - 1.1 mg beads)
2.28 Gm per 6.15 Gm paste syringe (GastroGard)
Dose: D: 0.7 mg/kg once daily (approx. one capsule per dog)
H: 4 mg/kg once daily for 4 weeks for gastric ulcers
2 mg/kg once daily for prevention of gastric ulcers

ONDANSETRON
(Zofran)
Use: Prevent nausea and vomiting associated with chemotherapy,
surgery, etc.
Dose Form: Inj: 2 mg/ml, 2 ml vial, 4 mg tablets
Dose: 0.1 – 1 mg/kg BID PO or IV
Note: Give slowly IV (over 2 to 5 minutes) or dilute

ORBIFLOXACIN
(Orbax)
Use: Broad spectrum antibiotic (fluroquinolone)
Dose Form: Oral: Suspension 30 mg/ml, 20 ml
Otic: (Posatex with mometasone & posaconazole)
Dose: D: 2.5-7.5 mg/kg q 24 h
C: 7.5 mg/kg q 24 h (DO NOT EXCEED)
Use: Broad spectrum antibiotic
Dose Form: Inj: 100 mg/ml, 500 ml (Oxybiotic-P) 200 mg/ml, 100 ml (L.A. 200)
Dose: B,Sw: 3 - 5 mg/lb of 100 mg/ml daily, IM or IV
9 mg/lb of 200 mg/ml IM,SQ for Pasteurella or
anaplasmosis in a single dose, or given q 72 h
Label withdrawal Meat: 28 day, Milk: 120 hrs
LI: 5 mg/lb of 100 mg/ml daily, IV 9 mg/lb of 200 mg/ml, SQ,
given q 72 h
Note: Use of the tetracyclines in horses may cause intractable diarrhea.
OXYTOCIN
Use: Ecbolic
Dose Form: 20 Units/ml, 100 ml vial
Dose: H,B: 75 - 150 Units, IV, obstetrics (OB)
      10 - 20 Units, IV, milk let-down (MLD)
Ll: 20 - 40 Units, SQ (MLD) repeat in 10 to 20 minutes
Sh,Sw: 30 - 50 Units, OB
      5 - 20 Units, MLD
D: 5 - 25 Units, OB
    2 - 10 Units, MLD
C: 5 - 10 Units, OB;1 - 10 Units, MLD

PAMIDRONATE
Use: Hypercalcemia of malignancy, bone pain, osteolytic bone lesions
Dose Form: 3 mg/ml, 10 ml vial
Dose: D: 1 mg/kg, (must be diluted in at least 250 ml NaCl 0.9% and administered over a 2 hour period)

PANCREATIC ENZYMES
(Viokase-V, Pancrezyme)
Use: Digestive aid
Dose Form: Oral Pwd: 4 and 12 oz bottles
Dose: D: 1 - 2 tsp mixed with food 15 - 20 minutes prior to meal
      C: 1/2 - 1 tsp per meal

PANTOPRAZOLE SODIUM
(Protonix)
Use: Antisecretory, proton pump inhibitor
Dose Form: Inj. 40 mg/vial (must be reconstituted
Dose: D: 1 mg/kg daily; administer over 10 to 15 minutes
      Foals: 1.5 mg/kg
      Ll: 1 mg/kg IV or 2 mg/kg IM or SQ q24h for 3 days
Note: Dilute contents of vial in 10 ml NaCl 0.9% to make concentration 4 mg/ml. Mixed solution stable for 24 hours.
PARENTERAL FLUIDS

Use: Caloric, electrolyte and fluid replacement
Dose Form: Inj: 0.45% Sodium Chloride, 1000 ml bag
5% Dextrose solution, 1000 ml bag
(approx. 4 Calories/Gm of dextrose)
50% Dextrose, 500 ml vial
Lactated Ringer's solution, 250 and 1000 ml bag;
mEq/liter: Na 131, K 4, Ca 3, Cl 110, Lactate 28
Normal Saline, 250, 1000 ml bottle; 150 ml, 250 ml, 500 ml,
1000 ml and 5000 ml bag;
mEq/liter: Na 155, Cl 155
Plasmalyte, 1000 ml and 5000 ml bags
mEq/liter: Na 140, K 5, Mg 3, Cl 98, Acetate 27, Gluconate 23

PENICILLIN G POTASSIUM

Use: Gram positive infections
Dose Form: Inj: 20 million unit vials
(contains 1.68 mEq of potassium per million units)
Dose: H: 22,000 Units/kg (10,000 Units/lb) every 6 hours, IM or IV
D,C: 22,000 Units/kg (10,000 Units/lb) q 4 to 6 hours, IM or IV
Note: All doses are minimum, half-life approximately 30 minutes

PENICILLIN G PROCAINE

Use: Gram positive infections
Dose Form: Inj: 300,000 Units/ml aqueous susp, 100 and 250 ml vial
Dose: All species: 22,000 Units/kg (10,000 Units/lb) once or twice daily,
IM; Label withdrawal Meat: 30 days; Milk: 48 hrs.

PENTOXIFYLLINE
(Trental)

Use: Increase erythrocyte flexibility, Cardiac cachexia
Dose Form: 400 mg extended-release tabs
Dose: D: 10 mg/kg q 12 h PO
H: 8.4 mg/kg q 8 - 12 h PO (navicular disease)

PENTOBARBITAL, SODIUM
(Beuthanasia-D)

Use: Euthanasia
Dose Form: Inj: 390 mg/ml with phenytoin 50mg/ml, 100 ml vial
Dose: All species: 85 mg/kg (39 mg/lb) IV for euthanasia
(Approx. 1 ml/10 lbs body weight. Common to draw an
additional 2 to 5 ml for small animals.)
Note: Controlled Substance - Schedule III
PERGOLIDE  
(Prascend)  
**Use:** Dopamine agonist, treat equine cushings  
**Dose Form:** 1 mg tablets  
**Dose:** H: 1.7 mcg/kg daily PO. Suggest starting with 0.5 mg/horse daily and reassess in 4 - 8 weeks with dexamethasone suppression test.

PERMETHRIN  
(Permectrin II)  
**Use:** External and premise insecticide  
**Dose Form:** Spray: 11% concentrate, 32 oz bottle  
**Dose:** Livestock: (Spray) Dilute 1 part concentrate with 200 parts water (approx., 0.05%)  
Premises: (Spray) Dilute 1 part concentrate with 67 parts water (approx., 0.15%)

PETROLATUM, WHITE  
(Vaseline)  
**Use:** Emollient, Protective, Lubricant, Hairball removal and prevention  
**Dose Form:** Topical: 13 oz. jar  
Ophth oint: with mineral oil, 3.5 Gm tube (Lacri-Lube, Puralube)  
Oral: with cod liver oil, 3 oz tube (Laxaire, Kat-A-Lax)  
**Dose:** C: Hairball prevention: 2 - 3 times a week, PO  
Hairball removal: one inch strip/10 lbs daily, PO

PHENOBARBITAL  
**Use:** Sedative, Anticonvulsant  
**Dose Form:** Inj: 65 mg/ml (Sod. Salt), 1 ml  
Oral: 15mg (16.2mg), 30mg (32.4mg), 60mg (64.8mg), 100mg (97.2 mg) tabs  
**Dose:** H,B,Sh: 1 - 4 mg/kg divided bid, PO, IM, IV  
(May require up to 27 mg/kg divided tid, especially in foals.)  
D,C: 2 mg/kg bid, PO to start; base increases in dose on serum levels.  
**Note:** 1) Controlled Substance - Schedule IV  
2) One time loading dose 6 - 20 mg/kg IV  
3) Diazepam (IV or rectally) may be given concurrently, since IV phenobarbital requires 20 - 30 minutes to exert an anticonvulsant effect.
PHENOXYBENZAMINE
(Dibenzyline)

Use: Alpha adrenergic blocker

Dose Form: Oral: 2.5 mg, 5mg capsules compounded by the Pharmacy

Dose: D: Start at 5 mg daily, increase in 5 mg increments to maximum of 30 mg per day. May be divided and given bid or tid.
C: Start at 2.5 mg daily, increase in 2.5 mg increments to maximum of 10 mg per day.

PHENYL BUTAZONE
(Butazolidin)

Use: Anti-inflammatory

Dose Form: Inj: 200 mg/ml, 100 ml vial
Oral: 1 GM tabs
20 Gm paste syringe
1.1 lb powder jar

Dose: H: 2.2 - 4.4 mg/kg daily, IV or PO
B: 10 mg/kg initially followed 24 hrs later by 5 mg/kg (to be given) q 48 h, IV or PO
Li,Sh: 5 mg/kg daily, IV or PO
Sw: 4 mg/kg (1.8 mg/lb) daily, IV or PO

Note: Illegal in dairy cattle and dairy goats.
Extralabel use in food animal species is discouraged due to prolonged residues
Suggested Meat Withdrawal: 90 days minimum

PHENYLEPHRINE
(Neo-synephrine)

Use: Adrenergic, Pressor agent, Decongestant, Mydriatic, Ophthalmic vasoconstrictor

Dose Form: Inj: 10 mg/ml, 1 ml amp
Ophth soln: 2.5%, 15 ml bottle

Dose: H: 5 mg IV
D: 1 mg IM; 0.1 mg IV

PHENYLPROPANOLAMINE

Use: Urinary incontinence

Dose Form: 25, 50 and 75 mg chewable tab
1. Dose: D: 1.5 mg/kg tid, PO for 7 days as the test dose. If effective 1.5 mg/kg one to three times daily, PO

Note: Now considered class 1 precursor drug by DEA
PILOCARPINE
Use: Cholinergic
Dose Form: Compounded for oral use 2%
Dose: D,C: 1 – 5 drops by mouth with meals

PIMOBENDAN
Use: Ionotrope and vasodilator for the treatment of Congestive heart failure due to dilated cardio miopathy or chronic mitral regurgitation
Dose Form: 1.25mg and 5mg and 10mg chewable tablet
Dose: D: 0.1-0.6mg/kg divided twice daily (usual dose 0.25 mg/kg bid)

PIROXICAM
(Feldene)
Use: Analgesic, Anti-inflammatory
Dose Form: 10 mg caps (1 mg, 2.5 mg, 5 mg and 7.5 mg capsules commonly compounded)
Dose: D: 0.3 mg/kg daily for 3 to 5 days then qod
Note: Use cautiously! GI ulceration common.

POLOXALENE
(Therabloat)
Use: Surfactant, Antibloat agent
Dose Form: Oral: 800 mg/ml, 60 ml bottle
Dose: B: 110 mg/kg (50 mg/lb)

POLYETHYLENE POLYMER
(J-Lube)
Use: Lubricant
Dose Form: 285 Gm shaker can

POLYETHYLENE GLYCOL 3350
(GoLytely, Miralax)
Use: Cathartic
Dose Form: Powder for reconstitution which contains:
sodium sulfate, sodium bicarbonate, sodium chloride,
potassium chloride, and polyethylene glycol.
Dose: D: 1.72 Gm/kg of powder reconstituted with warm water to a strength of 6.9 Gm/100ml, PO.
POLYMIXIN B

**Use:** Gram negative infections, Drug of choice for Pseudomonas

**Dose Form:** Inj or irrigation: 500,000 Units vial

See Neomycin for combination products

Bone Preservative Solution contains the following per liter:
- Polymixin B 500,000 Units, Neomycin 1 Gm and
- 3 GM of Ampicillin Sodium

**Note:** 10,000 Units = 1 mg of Polymixin B

POLYSULFATED GLYCOSAMINOGLYCAN

(Adequan, K-9)

**Use:** Intra-articular lubricant

**Dose Form:**
- 100 mg/ml, 5 ml vial single dose vial for equine
- 250 mg vial for I.A. for equine (single dose)
- 100 mg/ml, 5 ml MDV for canine

**Dose:**
- H: 500 mg/horse every 4 days for 7 treatments, IM
- D: 4.4 mg/kg every 4 days for 6 - 8 treatments, then once every 1 - 2 months, IM

POTASSIUM BROMIDE

**Use:** Anticonvulsant

**Dose Form:** Oral: 250 mg/ml, 250 and 500 mg chewable tablets

**Dose:** D: 10 - 30 mg/kg (4.5 - 13.6 mg/lb) bid, PO

**Note:** Steady state is reached more rapidly if an oral loading dose of sodium bromide (400 - 600 mg/kg) is given in divided multiple doses over a 48 hour period.

POTASSIUM CHLORIDE

**Use:** Hypokalemia, Ventricular fibrillation

**Dose Form:** Inj: 2 mEq/ml, 20, 250 ml vial

Crystals: Bulk for compounding
- 400 mEq (29.85 Gm) packets

**Dose:** B,Ll,Sh: 0.2 – 0.4 g/kg PO q24h as needed for hypokalemia

**Note:** Must be diluted before use (IV)

POTASSIUM CITRATE

**Use:** Alkalinizing agent, Prevention of Ca oxalate uroliths

**Dose Form:** Oral: Flavored granules, 300 Gm (approx. 60 scoops)

**Dose:**
- C: 1 scoop daily
- D: 1 scoop per 10 lbs daily

**Note:** One scoop (5 grams) contains approx. 300 mg of potassium citrate
POTASSIUM GLUCONATE
(Tumil-K)
Use: Oral Potassium Supplement
Dose Form: Oral: 2 mEq (468 mg) tab
Oral Powder: 2 mEq (468 mg) Potassium Gluconate per 1/4 teaspoon (0.65 gram), 4 oz bottle
Dose: D: 0.2 - 0.5 mEq/kg (0.1 - 0.23 mEq/lb) tid, PO
C: 2.5 - 7.0 mEq/cat daily, divided according to number of feedings.

POTASSIUM PHOSPHATE
Use: Potassium Supplement
Dose Form: Inj: 4.4 mEq/ml, 15 ml vials

POVIDONE-IODINE
(Betadine, Efodine)
Use: Antiseptic
Dose Form: Topical: solution, scrub; gallon ointment, 0.9 Gm packet, 1 lb jar
Note: Solution contains 10% povidone-iodine equal to 1% available iodine. When ordering dilute solution specify parts solution per parts diluent (i.e. 1:10).

PRADOFLOXACIN
(Veraflox)
Use: Fluroquinalone antimicrobial
Dose Form: Oral 25mg/ml suspension (15ml bottle)
Dose: C: 7.5mg/kg q24h for 7 day
PRAZIQUANTEL
(Droncit)

Use:

Cestocide

Dose Form:

Inj:  56.8 mg/ml, 10 ml vial
Oral:  23 mg tab (feline)
        34 mg tab (canine)

Dose:

Ll:  2 - 3 mg/kg PO or SQ
D:  IM or SQ
          5 lbs and less  17.0 mg (0.3 ml)
          6 - 10 lbs    28.4 mg (0.5 ml)
          11 - 25 lbs  56.8 mg (1.0 ml)
    over 25 lbs    0.2 ml/5 lbs

D: Oral (canine tab)
      5 lbs and less  17 mg (1/2 tab)
      6 - 10 lbs    34 mg (1 tab)
      11 - 15 lbs  51 mg (1 1/2 tabs)
      16 - 30 lbs  68 mg (2 tabs)
      31 - 45 lbs  102 mg (3 tabs)
      46 - 60 lbs  136 mg (4 tabs)
    over 60 lbs  170 mg (5 tabs max)

C: IM or SQ
      5 lbs and less  11.4 mg (0.2 ml)
      5 - 10 lbs    22.7 mg (0.4 ml)
    over 10 lbs    34.1 mg (0.6 ml)
          Maximum dose 0.6 ml
    Oral (feline tab)
      4 lbs and less  11.5 mg (1/2 tab)
      5 - 11 lbs    23 mg (1 tab)
    over 11 lbs    34.5 mg (1 1/2 tabs)

Note: Not for puppies less than 4 weeks or kittens less than 6 weeks.

PRAZIQUANTEL and PYRANTEL
(Drontal)

Use:

Broad Spectrum Anthelmintic for Cats

Dose Form:

Oral:  Praziquantel 18.2 mg and Pyrantel 72.6 mg per tab

Dose:

Weight (lbs)  # of tabs (single dose treatment)
            1.5 - 1.9        1/4
            2 - 3           1/2
            4 - 8           1
            9 - 12          1.5
            13 - 16         2

Note: Not for use in kittens less than 1 month old or weighing less than 1.5 lbs
PRAZIQUANTEL, PYRANTEL and FEBANTEL  
(Drontal Plus)  

Use: Broad Spectrum Anthelmintic for Dogs  
Dose Form: Oral Chewable Tablets:  

<table>
<thead>
<tr>
<th>Size</th>
<th>Small Dog Size</th>
<th>Medium Dog Size</th>
<th>Large Dog</th>
</tr>
</thead>
<tbody>
<tr>
<td>Praziquantel</td>
<td>22.7 mg</td>
<td>68.0 mg</td>
<td>136 mg</td>
</tr>
<tr>
<td>Pyrantel</td>
<td>22.7 mg</td>
<td>68.0 mg</td>
<td>136 mg</td>
</tr>
<tr>
<td>Febantel</td>
<td>113.4 mg</td>
<td>340.2 mg</td>
<td>680.4 mg</td>
</tr>
</tbody>
</table>

Dose Chart (single dose treatment):  

<table>
<thead>
<tr>
<th>Weight (lbs)</th>
<th>Small Dog Size</th>
<th># Tablets</th>
<th>Weight (lbs)</th>
<th>Med Dog Size</th>
<th># Tablets</th>
<th>Weight (lbs)</th>
<th>Large Dog Size</th>
<th># Tablets</th>
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<tbody>
<tr>
<td>2 - 4</td>
<td>0.5</td>
<td>1.0</td>
<td>26 - 30</td>
<td>1.0</td>
<td>1.5</td>
<td>45 - 60</td>
<td>1.0</td>
<td>1.5</td>
</tr>
<tr>
<td>5 - 7</td>
<td>1.0</td>
<td>1.5</td>
<td>31 - 44</td>
<td>1.5</td>
<td>2.0</td>
<td>61 - 90</td>
<td>1.5</td>
<td>2.0</td>
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<tr>
<td>8 - 12</td>
<td>1.5</td>
<td>2.0</td>
<td>45 - 60</td>
<td>2.0</td>
<td></td>
<td>91 - 120</td>
<td>2.0</td>
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<tr>
<td>13 - 18</td>
<td>2.0</td>
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<tr>
<td>19 – 25</td>
<td>2.5</td>
<td></td>
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</tr>
</tbody>
</table>

Note: SPECIFY SMALL DOG, MED DOG OR LARGE DOG SIZE TABS WHEN PRESCRIBING!  
Not for use in dogs weighing less than 2 lbs or puppies less than 3 weeks of age

PRAZOSIN  

Use: Alpha 1- adrenergic blocker, antihypertensive, also decreases urethral resistance  
Dose form: 1 and 2 mg capsules, compounded 0.5 mg capsules  
Dose: D: 1 mg/15 kg P.O. q 8h  
C: 0.5 mg dose P.O. q 8h

PREDNISOLONE  

Use: Corticosteroid therapy  
Dose Form: Oral: 5, 20 mg tab  
1 mg/ml oral liquid  
Ophth susp: 1%, 5 ml (Pred Forte)  
Dose: H: 1 mg/kg (0.45 mg/lb) daily before tapering  
D,C: 0.5 - 2.2 mg/kg (0.23 - 1 mg/lb) PO  

Note: See Trimeprazine/Prednisolone (Temaril-P)
PROBIOTICS

**Use:**
to promote intestinal health and balance, diarrhea

**Dose Form:**
- FortiFlora powder packets for dogs and cats
- Prostora tablets for dogs
- Proviable-DC for dogs and cats
- Assure Plus for Equines

**Dose:**
See individual package label for directions. All products are OTC no prescription required.

PROPARACAINE (Ophthetic, Ophthaine)

**Use:**
Topical anesthetic

**Dose Form:**
- Ophth soln: 1%, 15 ml bottle

PROPOFOL

**Use:**
Anesthesia

**Dose Form:**
- Inj: 10 mg/ml, 20 and 100 ml vial
- D: 4 - 6 mg/kg, IV, titrated to effect
- C: 6 - 8 mg/kg, IV, titrated to effect

PROPYLENE GLYCOL

**Use:**
Glucogenic agent

**Dose Form:**
- Oral liquid, gallon

**Dose:**
- B: 30 ml/100 lbs body weight PO, 3 - 5 days

PSYLLIUM (Equi-Psyllium, EquiAid, Metamucil) (Assure Plus)

**Use:**
Bulk cathartic

**Dose Form:**
- Oral: Bulk Pellets & Powder, 100%
- D,C: 1/4 tsp (100%) powder in water or food
- H: 1 - 3 cups (100%)/1200 lbs, daily PO

**Note:**
One teaspoonful of powder (100%) weighs approx. 2.75 Gm (10 tsp/oz). Request in ounces or pounds.

PYRANTEL PAMOATE

**Use:**
Anthelmintic

**Dose Form:**
- Oral: 50 mg of base per ml, 960 ml bottle (Strongid T)
  3.6 Gm/20 ml paste syringe (Strongid P)
- H: 6.6 mg/kg (6 ml/100 lbs body weight)
- LI: 8.8 mg/kg
- D: 10 mg/kg (4.54 mg/lb)
- C: 20 mg/kg (9 mg/lb)
RANITIDINE  
(Zantac)  
**Use:**  H₂ receptor antagonist  
**Dose Form:**  Inj: 25 mg/ml, 6 ml vial  
Oral: 300 mg tablets  
**Dose:**  D: 2 mg/kg bid to tid PO, IV, SQ  
C: 3.5 mg/kg bid, PO  
2.5 mg/kg bid, IV  
H: 4.4 - 6.6 mg/kg tid, PO  
1.4 mg/kg tid, IM  
0.9 mg/kg tid, IV  
Calves, Li: 50 mg/kg q8h, P  

RIFAMPIN  
**Use:**  Antibacterial  
**Dose Form:**  Oral: 300 mg cap  
**Dose:**  H: 10 mg/kg (4.6 mg/lb) bid  
**Note:**  Use only in combination with other antibacterials  

ROBENACOXIB  
(ONCIOR)  
**Use:**  Anti-inflammatory analgesic (NSAID)  
**Dose Form:**  6 mg tablets, 20 mg/ml injectable, 10 ml vial  
**Dose:**  C: under 6 kg 1 tablet q 24 h, over 6 kg 2 tablets q 24 H  
Injectable 2 mg/kg SQ q24 H  
**Note:**  Only approved for 3 day treatment  

S-ADENOSYL METHIONINE  
(SAMe, Denosyl SD4)  
(**Denamarin-combination product**)  
**Use:**  Nutraceutical, hepatic protectant  
**Dose Form:**  90, 225, & 425 mg (stabilized) tabs, also in these sizes as combination Swallow tabs  
**Dose:**  D, C: 18 mg/kg rounded to the closest tablet size or combination.  
**Note:**  Do not divide tablets. Give on empty stomach at least one hour prior to feeding. Administer or encourage drinking water (3 - 6 cc) to speed passage into stomach.  
**Denamarin:**  S-adenosylmethionine 90mg/Silybin A+B 9mg  
S-adenosylmethionine 225mg/Silybin A+B 24mg  
S-adenosylmethionine 425mg/Silybin A+B 35mg  
**We only carry chewable tablets in the 225mg/24mg size**  

SALICYLIC ACID  
(Keratolux)  
**Use:**  Keratolytic  
**Dose Form:**  Shampoo:  
Salicylic Acid 0.86%/Zinc gluconate 0.5%/Pyridoxine 0.5%
SELAMECTIN
(Revolution)

Use: Broad spectrum parasiticide
Dose Form: Topical: 15, 30, 45, 60,120, 240 and 360 mg tubes, 6 tubes/packet
Dose: D: 6 mg/kg topically once a month

Suggested canine schedule:

- Up to 5 lbs: 15 mg
- 5.1 to 10 lbs: 30 mg
- 10.1 to 20 lbs: 60 mg
- 20.1 to 40 lbs: 120 mg
- 40.1 to 85 lbs: 240 mg
- 85.1 to 135 lbs: 360 mg

C: Up to 5 lbs: 15 mg
- 5.1 to 15 lbs: 45 mg

Note: Animals must be at least 6 weeks of age.

SELEGILINE
(Anipryl, L-deprenyl)

Use: Cognitive dysfunction syndrome (CDS), Pituitary dependent hyperadrenocorticism (PDH)
Dose Form: 10, 30 mg tabs
Dose: D: 0.5 - 1 mg/kg daily (CDS)
- D: 1 mg/kg daily (PDH)

SELENITE, SODIUM
(Bo-Se)

Use: Selenium source
Dose Form: Inj: 1 mg with Vitamin E 68 IU per ml, 100 ml vial (Bo-Se)
Dose: H,B,Sw,Sh: 55 mcg/kg (25 mcg/lb)

SEVOFLURANE
(Ultane)

Use: Inhalant anesthetic
Dose Form: 250 ml bottle
Dose: 0.5 -1 mg/kg tid to qid

SHAMPOO, HYPO-ALLERGENIC

Use: Emollient, rehydrating shampoo
Dose Form: (Allergroom) 8 oz bottle
- (Hydra-Pearls) 12 oz bottle
SILDENAFIL CITRATE
Use: Pulmonary hypertension
Dose Form: 20 mg tab
Dose: D/C: 1 – 3 mg/kg PO tid

SILVER NITRATE
Use: Antiseptic, Caustic
Dose Form: Sticks;

SILVER SULFADIAZINE
(Silvadene)
Use: Antibacterial
Dose Form: Topical Cream: 1%, 50 Gm TUBE and 400 Gm jar

SILYBIN A+B
(Marin) (**Denamarin-combination product)
Use: Nutraceutical, hepatic protectant
Dose Form: Canine small to medium dogs Silybin 24mg, Vitamin E 105IU, Zinc 17mg
Canine large dog Silybin 70mg, Vitamin E 300IU, Zinc 45mg
Dose: Feline up to 14 pounds 1 tablet daily/ Feline over 14 pounds 2 tablets daily
Canine small to medium dog: <10 pounds ¼ tablet daily
10-19lbs ½ tablet daily
20-35 lbs 1 tablet daily
55-99lbs 1 tablet daily
>100lbs 1 & ½ tablets daily
Canine large dog: 36-54lbs ½ tablet daily
55-99lbs 1 tablet daily
>100lbs 1 & ½ tablets daily
(**Denamarin :S-adenosylmethionine 90mg/Silybin A+B 9mg
S-adenosylmethionine 225mg/Silybin A+B 24mg
S-adenosylmethionine 425mg/Silybin A+B 35mg
We only carry chewable tablets in the 225mg/24mg size

SODIUM BICARBONATE
Use: Systemic antacid
Dose Form: Inj: 1 mEq/ml, 50 ml vial
       Pwd: bulk
       Packets: 100 mEq (8.3 Gm) and 600 mEq (50 Gm)

SODIUM CHLORIDE
Dose Form: Crystals
       Inj: 0.9% with preservative, 30 ml vial
           7%, 500 ml vial
       Ophth oint: 5%, 3.5 Gm (Muro 128)
       Ophth soln. 5%, 15 ml
       Irrigation: 0.9%, 1000 ml pour bottles
Note: See also Parenteral Fluids
SODIUM IODIDE
Use: Hypothyroidism, Liquefy granulomas, Actinobacillosis
Dose Form: Inj: 20% soln, 250 ml vial
Dose: B: 66 mg/kg (30 mg/lb), IV

SODIUM PHOSPHATE
Use: Compounding, Phosphate supplementation
Dose Form: Mono basic salt
Di basic salt

SOTALOL (Betapace)
Use: Beta blocker, Antiarrhythmic
Dose Form: 80 mg tabs
Dose: D: 0.5 - 2 mg/kg q 12 h PO

SPIRONOLACTONE (Aldactone)
Use: Potassium Sparing Diuretic
Dose Form: Oral: 25 mg tab
Dose: D: 1 to 2 mg/kg daily, PO (diuretic)
6.25 to 12.5 mg/dog daily, PO (cardioprotective)
Note: Potential hyperkalemia when used with ACE inhibitors

SPIRONOLACTONE - HYDROCHLOROTHIAZIDE
Use: Diuretic
Dose Form: Combination tablet with 25 mg spironolactone and 25 mg of hydrochlorothiazide
Dose: D: Dose on spironolactone, 0.5 - 2 mg/kg q 12 - 24 h PO
Note: Use in combination with furosemide and ACE inhibitor only if renal function and blood pressure are adequate and patient is NOT hyperkalemic.

SUCRALFATE (Carafate)
Use: Ulcer treatment
Dose Form: Oral: 1 Gm tab
Dose: D: 0.5 - 1 Gm tid one hour prior to feeding
H: 20 – 40 mg/kg tid to qid, PO
Foal: 10 – 20 mg/kg tid to qid, PO
Note: Should be dosed at least 1 hr before food or other medication, on empty stomach
SULFADIMETHOXINE
(Albon)

Use: Long-acting sulfonamide

Dose Form: Oral: 250 mg tabs
              94.6 gm/3.77 oz packet
              50 mg/ml susp

Dose: All species: 55 mg/kg (25 mg/lb) as the first dose then 25 mg/kg
       (12.5 mg/lb) daily PO, IV

Note: Extralabel use of any sulfas in Dairy Cattle is **ILLEGAL**.
      Label withdrawal time Meat: 28 days; Milk: 120 hrs.

TACROLIMUS
(Protopic)

Use: Immunosuppressant

Dose Form: Topical: 0.1%, 30 Gm tube

Dose: Apply topically to lesion BID

TERBENAFINE

Use: Antifungal

Dose Form: Oral: 250 mg tab

Dose: D: 30 - 40 mg/kg q 24 H

TERBUTALINE
(Brethine)

Use: Bronchial, vascular dilator

Dose Form: Oral: 5 mg tab

Dose: H: 0.04 - 0.13 mg/kg q 8 hours, PO
       D: 2.5 mg/dog q 12 hours, PO
       C: 1.25 mg/cat q 12 hours, PO

THEOPHYLLINE

Use: Bronchodilator

Dose Form: 100 mg sustained release (scored) tabs

Dose: D: 5 - 20 mg/kg q 12 h (sustained release)
       C: 25 mg/kg once daily

Note: Starting at a lower dose is suggested. Increase if no evidence of toxic
effects.
**THIABENDAZOLE**

**Use:** Anthelmintic, Antifungal  
**Dose Form:** Otic: 40 mg/ml with dexamethasone and neomycin, 15 ml (Tresaderm)  
**Dose:** Otic: D,C: 5-15 drops/ear bid

**THIAMINE**

**Use:** Nutrition, Bracken intoxication  
**Dose Form:** Inj: 200 mg/ml, 100 ml vial  
**Dose:** H: 100 mg to 1 gm, IV or IM  
B: 10-20 mg/kg, IV or IM q12-24 hrs.  
Lambs: 5 mg, IV  
D,C: 2.2 mg/kg (1 mg/lb), IM

**TIMOLOL**

**Use:** Ocular hypertension, Open-angle glaucoma  
**Dose Form:** Ophth. Soln.: 0.5%, 10 ml dropper bottle  
**Dose:** 1 drop bid

**TISSUE PLASMINOGEN ACTIVATOR**

**Use:** Thrombolytic agent  
**Dose Form:** Injectable 2 mg per vial (CATHFLO) refrigerated item in the Pyxis refrigerator  
**Dose:**  
D,C: 0.2 mg/kg IV bolus  
0.7 mg/kg IV over 30 minutes  
0.5 mg/kg IV over 1 hour  
1.4 mg/kg total

**TOBRAMYCIN**

**Use:** Ophthalmic antibiotic  
**Dose Form:** Ophth. Soln; 0.3%, 5 ml  
**Dose:** 1 drop 4-6 h

**TOCERANIB PHOSPHATE**  
*(Palladia)*

**Use:** Treatment of cutaneous mast cell tumors  
**Dose Form:** oral tablets; 10, 15 and 50 mg  
**Dose:** D: 3.25 mg/kg every 48 hours.  
*(CSU dose is 2.75 mg/kg M-W-F)*
TRAMADOL
(Ultram)
Use: Analgesic, central acting
Dose Form: 50 mg tab
Dose: D,C: 1-5 mg/kg PO BID
Note: Maximum amount dispensed 1 month supply.

TRAVOPROST
(Travatan)
Use: Decrease intraocular pressure
Dose Form: 0.04% ophthalmic solution 2.5ml bottle
Dose: 1 drop once or twice daily.

TRAZODONE
Use: Serotonin 2A Antagonist/Reuptake Inhibitor (mild sedative)
Dose Form: oral 50mg tablet
Dose: D: 1-5mg/kg bid
Note: May need to adjust does down when used in combination with Tramadol
The combination can cause serotonin syndrome
Maximum dose 300 mg

TRIAMCINOLONE
(Kenalog, Vetalog)
Use: Corticosteroid therapy
Dose Form: Inj: 10 mg/ml, 5 ml vial
Topical: 0.1% cream with nystatin, neomycin and thiostrepton in
water washable base, 7.5 gm tube (Panolog Cream)
0.1% “ointment” with nystatin, neomycin and thiostrepton
in oil base, 7.5 ml (Panolog Ointment, Derma-4)
0.015% spray, 16 oz btl (Genesis)
Dose: D,C: 0.1 - 0.2 mg/kg (0.045 - 0.09 mg/lb), IM or SQ
D: Spray: BID for 7 days, daily for 7 days then qod

TRILOSTANE
(Vetoryl)
Use: Adrenal steroid synthesis inhibitor (hyperadrenocorticism)
Dose Form: 10,30 and 60mg capsules, 5 mg can be ordered
Dose: D: 2-10mg/kg q 24h adjust dose per monitoring parameters
(usual dose 6 mg/kg)
C: 7mg/kg/day divided and given twice daily
Warning: Do not handle this drug if you are pregnant or trying to get pregnant. Do not split capsules.
TRIMEPRAZINE/PREDNISOLONE
(Temaril-P)
Use: Antipruritic
Dose Form: Oral: each tablet contains:
  Trimeprazine     5mg
  Prednisolone     2mg
Dose: D: 1 tablet per 15 lb body weight, bid for 4 days then reduce and adjust dose to maintain remission.

TRIMETHOPRIM/SULFA
Use: Antibacterial
Dose Form: Combination product containing one part trimethoprim to 5 parts sulfamethoxazole. Note - Strengths listed below is for the combination of the two ingredients (e.g. the “960’s” contain 800 mg of sulfa and 160 mg of trimethoprim). Doses below (i.e, 15 mg/kg) are based on the combined weight of the two ingredients.
Oral: 480, 960 mg tab: 48 mg/ml oral suspension
Dose: H: 30 mg/kg bid (Approx. 15 “960’s” per 1000 lb horse bid)PO
D: 15 mg/kg (7 mg/lb) bid PO for routine infections. May double dose for unique or difficult infections.
C: 15 mg/kg (7 mg/lb) bid PO up to 120 mg BID maximum

General Oral Guidelines for Dogs

<table>
<thead>
<tr>
<th>Weight</th>
<th>Dosage</th>
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<tbody>
<tr>
<td>Up to 17 lbs</td>
<td>Use oral susp 7 mg/lb bid</td>
</tr>
<tr>
<td>18 to 34 lbs</td>
<td>half 480 mg tab (240 mg) bid</td>
</tr>
<tr>
<td>35 to 68 lbs</td>
<td>480 mg tab bid</td>
</tr>
<tr>
<td>69 to 102 lbs</td>
<td>1 &amp; 1/2 480 mg tab (720 mg) bid</td>
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<tr>
<td>Over 103 lbs</td>
<td>960 mg tab bid</td>
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</tbody>
</table>

TROPICAMIDE
(Mydriacyl)
Use: Mydriatic
Dose Form: Ophth soln: 1%, 15 ml bottle

TULATHROMYCIN
(Draxxin)
Use: Macrolide antibiotic
Dose Form: Inj: 100 mg/ml, 100 ml vial
Dose: B: 2.5 mg/kg SQ (not more than 10 ml per injection site)
Sw: 2.5 mg/kg IM (not more than 2.5 ml per injection site)
Note: Label withdrawal time: B: 18 days; Sw: 5 days
TYLOSN
(Tylan)

Use: Macrolide antibiotic
Dose Form: Oral Powder: 25 gm concentrate
Dilute powder 318.6 gm bottle (compounded)
Oral: 30, 60, 130, 240, 345 and 430 mg compounded caps
Dose: D: 11 mg/kg (5 mg/lb) tid, PO (approximately 1/4 tsp powder
per 20 pounds body weight ***powder must be diluted for this
dosing)

URSODIOL
(Actigall, Ursodeoxycholic acid)

Use: Dissolution of radiolucent gallstones, cholesterol lowering agent
Dose Form: Oral: 250 mg tablets
Dose: D, C: 15 mg/kg daily

VINBLASTINE

Use: Antineoplastic agent
Dose Form: 1 mg/ml, 10 ml vial
Dose: D: 2 mg/m² dosing, interval varies according to chemotherapy protocol (new
max dose as of 2005 is up to 3 mg/m²)

VINCRISTINE
(Oncovin)

Use: Antineoplastic agent
Dose Form: Inj: 1 mg/ml, 2 ml vial
Dose: D,C: 0.5 - 0.75 mg/m² weekly

VINORELBINE TARTRATE

Use: Antineoplastic agent
Dose Form: Inj: 10 mg/ml, 1ml vial
Dose: D: 15 to 18 mg/m²
C: 8 mg/m²
Note: Dilute to 2 mg/ml with NaCl 0.9% for IV administration

VITAMIN A

Use: Nutrition
Dose Form: Inj: 500,000 IU/ml with Vitamin D₃ 75,000 IU/ml, 100 ml vial
Topical: with Vitamin D, 1 lb jar (Vitamin A + D Ointment)
Dose: 65 IU/kg daily, minimum requirement
B: 2 - 4 ml, IM
Sh,Sw: 0.1 - 2 ml, IM

VITAMIN B 12
(Cyanocobalamin)

Use: Nutrition
Dose Form: 1000mcg/ml, 1ml vial
Dose: C: 250 mcg/ dose IM or SQ
Avian: 0.25-0.5mg/kg intramuscularly every 7 days.
VITAMIN B COMPLEX
Use: Nutrition
Dose Form: Inj: 100 ml vial
Dose: H,B: 10 - 20 ml daily, IM or IV
Sh: 3 - 5 ml daily, IM or IV
Sw: 2 - 5 ml daily, IM or IV
D,C: 1 - 2 ml daily, IM or IV
Note: Contains B₁₂ 100 mcg/ml. Formulation available through Pharmacy.

VITAMIN C
Use: Nutrition
Dose Form: Inj: 250 mg/ml as sodium salt, 250 ml vial
Dose: H,B: 1000 - 3000 mg
D,C: 25 - 100 mg

VITAMIN D
Use: Nutrition
Dose Form: See Vitamin A for combination product
Dose: Recommended minimal daily requirements
H: 660 IU/100 kg (300 IU/100 lb)
B: 880 IU/100 kg (400 IU/100 lb)
Sh: 300 IU/cwt, 660 IU/100 kg
D: 20 IU/kg (9 IU/lb)
C: 9 IU/kg (4 IU/lb)
LI: 2000 IU/kg, SQ q 60 to 90 days, for hypophosphatemic rickets caused by hypovitaminosis D.

VITAMIN E
(dl-alpha tocopheryl)
Use: Nutrition, Antioxidant
Dose Form: Oral: 400 IU caps, Liquid approx 500 International units/ml
Dose: H: 2000 to 10,000 IU once daily
D: 400 IU (for medium and large dogs) once daily
B,Li,Sh,Sw: 10-20 IU/kg PO q24h

VITAMIN E and SELENITE
(Bo-Se)
Use: Nutrition
Dose Form: Inj: Each ml contains:
Vitamin E 68 IU and selenite 1 mg, 100 ml vial
Dose: H: 1 ml/45 kg (1 ml/100 lb) body weight, IM or IV
B,Sh: 1 ml/20 - 25 kg (1 ml/50 lb) body weight, IM or SQ
VITAMIN K₁
(Phytonadione)

**Use:** Nutrition, Warfarin antidote

**Dose Form:**
- Inj: 10 mg/ml, 100 ml vial
- Oral: 25 mg capsules/chewable tablets

**Dose:**
- H,B: 80 - 250 mg, IM
- D,C: 1 mg/kg (0.45 mg/lb) tid, IM or PO

**Note:** For long-acting anticoagulant rodenticide toxicity, 2.5 - 5 mg/kg in sm animals.

VITAMINS, MULTIPLE

**Use:** Nutrition

**Dose Form:**
- Oral: gel, 120 Gm tube

**Dose:**
- Sm animal: 1 & 1/2 tsp/10 lbs daily (supplement)
- 3 tsp/10 lbs daily (main source)

**Note:** Provides approx 150 - 160 calories/oz. Formulation available through Pharmacy (Nutri-cal)

WATER, STERILE

**Dose Form:**
- Inj: 20 ml without preservative
- 30 ml with preservative
- Irrigation: 500 ml bt

XYLAZINE
(Rompun, AnaSed, Tranquived)

**Use:** Sedative, Analgesic, Emetic in cats

**Dose Form:**
- Inj: 20 mg/ml, 20 ml vial
- 100 mg/ml, 50 ml vial

**Dose:**
- H: 2 - 3 mg/kg (0.9 - 1.4 mg/lb), IM
- 0.5 - 1.1 mg/kg (0.2 - 0.5 mg/lb), IV
- B,Sh: 0.1 - 0.3 mg/kg (0.05 - 0.07 mg/lb), IM
- Sedative dose 0.03 - 0.1 mg/kg (0.007 - 0.05 mg/lb), IV
- Li: 0.22 mg/kg SQ, 0.22 - 0.66 mg/kg IM
- 0.44 mg/kg IV
- D: 1 mg/kg (0.45 mg/lb), IM or IV
- C: 0.44 mg/kg (0.2 mg/lb), IM, emetic
- Sw: 2.2 mg/kg IM

YOHIMBINE
(Antagonil)

**Use:** Alpha-2 antagonist

**Dose Form:**
- Inj: 2 mg/ml, 20 ml vial

**Dose:**
- D,C: 0.1 - 0.5 mg/kg IV
- H: 0.075 mg/kg IV
- B,Sh,Goat,Llama: 0.125 mg/kg IV
ZINC OXIDE
  Use: Emollient, Protective
  Dose Form: Topical: 40% ointment, 2 oz (Desitin)

ZINC SUPPLEMENT
  (Zinpro)
  Use: Zinc Supplement
  Dose Form: 15 mg (elemental zinc) per tab, powder 12%
  Dose: D: 15 mg/20 lb body weight

ZONISAMIDE
  Use: Anticonvulsant
  Dose Form: oral 50 and 100mg capsules
  Dose: D: 5-10mg/kg PO q12h
        C: 5-10mg/kg PO q 12-24h
EXOTIC ANIMAL EMERGENCY DOSAGE INFORMATION

Updated: November 2004
Matthew S. Johnston, VMD, DABVP - Avian
Terry W. Campbell, DVM, PhD.
Zoological Medicine Service
James L. Voss Veterinary Teaching Hospital
Colorado State University
Adapted with permission from Evelyn Ivey, DVM, ABVP-Avian

EMERGENCY EXOTICS FORMULARY

**Ferrets:**
When in doubt, use feline drugs and dosages

**Fluids:** maintenance Plasmalyte 50-60 ml/kg/day. Give IV CRI or SQ q 12 hr
Force feeding: 3-6 cc Iams Maximum Calorie or Hill’s A/D Formula q 4-6 hr

**Antibiotics**
Ampicillin 22 mg/kg IV or SQ q 12 hr
Clavamox liquid 15 mg/kg q 8-12 hr
Enrofloxacin 15 mg/kg IV (slow/dilute), SQ, PO q 24 hr
Metronidazole 20 mg/kg IV, PO q 12 hr (oral suspension 50 mg/ml)

**Cardiac Drugs**
Furosemide 1-4 mg/kg PO, IM, IV q 8-12 hr (10 mg/ml oral suspension)
Enalapril 0.5 mg/kg PO q 48 hr (VHUP suspension 2.5 mg/ml)
Nitroglycerine 1/8” on pinna q 6 hr

**Misc.**
Prednisolone for insulinoma: start at 0.5 - 1 mg/kg PO q 12 hr. Available in 1 mg/ml solution
Diazoxide for insulinoma (usually second line, if prednisolone is contraindicated or if the ferret is already on the maximum dose of prednisolone and is still hypoglycemic. Start at 5mg/kg PO q 12 hr. Proglycem 50 mg/ml. Can cause hypertension, lethargy, nausea.
Flutamide (androgen receptor antagonist for use with prostatomegaly associated with adrenal gland disease) 10mg/kg PO q12h
Sucralfate 100 mg PO q6-8h
Other drugs as for feline
EXOTIC SPECIES DOSAGE INFORMATION (cont.)

Rabbits, rodents

**Fluids:**
rabbit: maintenance Plasmalyte 70-100 ml/kg/day. Maximum IV infusion rate is 4 ml/kg/hr.
rodent: maintenance Plasmalyte 75 ml/kg/day

Force feeding: Oxbow Critical Care formula (can be mixed with A/D if omnivorous rodents)

**Antibiotics**

**NEVER USE:** penicillins, cephalosporins, chlortetracycline, clindamycin, erythromycin, or lincomycin: these drugs can cause a fatal dysbiosis!

- Enrofloxacin 10-20 mg/kg IV, SQ (diluted), IM, PO q 24 hr.
- Ciprofloxacin ophthalmic drops (Ciloxan); good for Pasteurella conjunctivitis, nasal infection. 1 drop in each nostril and eye q 12 hr.
- Trimethoprim-Sulfa 30 mg/kg PO, SQ, or IM q 12 hr. 48 mg/ml oral suspension
- Metronidazole 20 mg/kg IV, PO q 12 hr. Oral suspension 50 mg/ml made in pharmacy, 5 mg/ml injectable
- Chloramphenicol 50 mg/kg SQ, IM, IV, PO q 12 hr
- Florfenicol 30 mg/kg PO, SC, IM, IV q 24 hr
- Orbifloxacin 20mg/kg PO q 24 hr

**Analgesics**

- Buprenorphine 0.02 - 0.05 mg/kg IM q 6-12 hr for analgesia.
- Meloxicam 0.5 - 1 mg/kg PO q 12 hr (Metacam susp 1.5 mg/ml in pharmacy)
- Carprofen 2 mg/kg POq12h
- Dexmedetomidine 100mcg - 150mcg/kg CRI 1-5mcg/kg/hr IV

**Cardiac drugs**

- Furosemide 1-4 mg/kg PO, IM, IV q 6-12 hr
- Enalapril 0.5 mg/kg PO q 48 hr
- Nitroglycerine - 1/8 - 1/2 “apply on pinna proportional to the animals size q 6 hr x 24 hr
- Vitamin C 50 -100 mg SC q 24 hr, Guinea pigs

**Birds**

**Fluids:** maintenance Plasmalyte 50-60 mg/ml/day, usually given SQ q 12 hr
Tube feed (Emeraid, TwoCal, Deliver 2.0, juvenile hand-feeding formula): 20 ml/kg body weight - abort feeding if patient regurgitates
EXOTIC SPECIES DOSAGE INFORMATION (cont.)

Antibiotics
Enrofloxacin 15-20 mg/kg IM, SC (dilute), PO, q 24 hr
Trimethoprim-Sulfa 30 mg/kg PO q 12 hr
Vibramycin (doxycycline) 100 mg/kg IM (divide over 3 injection sites) once weekly for 5-6 weeks. Vibraclor 200 mg/ml Use to treat psittacosis. **DO NOT** use doxycycline hyclate—will cause severe muscle necrosis.
Silvadene: apply a thin layer topically
Ketoconazole 30 mg/kg PO q 12 hr
Orbifloxacin 20mg/kg PO q 24 hr
Itraconazole 5-10mg/kg daily

Nutritional supplements
Vitamin A/D/E: 0.1 ml/300g body weight IM once per hospitalization (lasts a few weeks).
Vitamin K 2.5 mg/kg IM q 6-24 hr
Iron Dextran 10 mg/kg q 7 days.
Calcium Gluconate 10%: 100 mg/kg (1 ml/kg) IM q 12 hr

Misc.
CaEDTA 30 mg/kg SQ q 12 hr. Make 4 mg/ml solution by placing 2 g in 500 ml saline bag
Buprenorphine 0.02 – 0.05 mg/kg IM q 6-12 hr for analgesia.
Meloxicam can go up to 1mg/kg q12h
Feline petroleum-based laxative 0.1 ml/100 g body weight BID.

Reptiles:
Oral absorption of medications is poorly demonstrated in reptiles; Parenteral routes are considered more reliable, esp. in anorectic or debilitated animals. **NEVER GIVE IVERMECTIN TO TURTLES/TORTOISES.**

Fluids:
Plasmalyte maintenance 15ml/kg/day. Give q 24 hr
Force feeding is usually unnecessary in the emergency situation. Iguanas and other vegetarian lizards: vegetable baby food ~ 5cc/kg. Do not feed if patient is too weak to swallow.

Carnivorous reptiles do not need to be fed on an emergency basis.

Antibiotics
Ceftazidime 30 – 50 mg/kg IM q 48 hr
Florfenicol 15-30 mg/kg IM q 24 hr

Antiparasitics
Fenbendazole 100 mg/kg PO once weekly x 3 weeks
Metronidazole 50 mg/kg PO once weekly x 3 weeks
Nutritional Supplements
Vitamin A/D/E 0.15 ml/kg IM q 3 weeks Calcium Gluconate 10% 100mg/kg q12/24 hr Aluminum hydroxide: to lower phosphorus 0.2 ml/kg PO q 24 hr with food
BIOLOGICALS
Including biologicals in the Formulary has required that information be general rather than detailed. Biologicals for preventing or treating the identical disease are unique to the company producing them. Vial size, dosage volume, and even the route of administration (IM vs SQ, etc.) may vary between products. Companies also routinely reformulate their products and revise the dosage information accordingly. Because detailed Formulary information could readily cause error if it failed to correspond to the product being used, our decision has been only to list biologicals stocked.

SMALL ANIMAL BIOLOGICALS

CANINE BORDETELLA BRONCHISEPTICA BACTERIN-PARAINFLUENZA-ADENOVIRUS TYPE 2
Novibac: Intra-Trac 3/Intervet

CANINE DISTEMPER-ADENOVIRUS TYPE 2- PARVOVIRUS
Novibac: Canine 1 DAPPV/Intervet

CANINE LEPTOSPIRA
Vanguard L-4/Pfizer Animal Health

CANINE INFLUENZA VACCINE (KILLED)
Nobivac: H3N8/Intervet

FELINE LEUKEMIA (KILLED)
Feline 2-Felv/ Novibac

FELINE PANLEUKOPENIA-RHINOTRACHEITIS-CALICIVIRUS
Nobivac: Feline 1-HCP/Intervet
Intranasal: Feline UltraNasal FVRCP vaccine/Heska

FERRET DISTEMPER VACCINE (LIVE) (Canarypox Vector)
Currently not available

RABIES (KILLED)
Imrab-3/ Merial

RABIES (LIVE) (Canarypox Vector for feline)
Purevax Feline Rabies/Merial
FOOD ANIMAL BIOLOGICALS

BRUCELLA ABORTUS, STRAIN RB-51 (Live)
(RB-51)/Professional Biological Company

CLOSTRIDIUM PERFRINGENS TYPES C & D ANTITOXIN
C&D Antitoxin/Boehringer/Ingelheim

CLOSTRIDIUM PERFRINGENS TYPES C & D TOXOID-TETANUS TOXOID
Bar-Vac CD/T/Boehringer/Ingelheim

TETANUS ANTITOXIN
Prizer Animal Health

TETANUS TOXOID
Super-TET with Havlogen/Intervet
EQUINE BIOBLOGICALS

ENCEPHALOMYELITIS E/W-TETANUS TOXOID (KILLED)
(3-WAY)
Encevac T with Havlogen/Merck

ENCEPHALOMYELITIS E/W-TETANUS TOXOID-EQUINE INFLUENZA (KILLED)
(4-WAY)
Encevac TC4 with Havlogen/Merck

ENCEPHALOMYELITIS E/W-TETANUS TOXOID-EQUINE INFLUENZA-RHINOPNEUMONITIS
(KILLED)
(5 WAY)
Prestige V with Havlogen/Merck

ENCEPHALOMYELITIS E/W-TETANUS RHINOPNEUMONITIS INFLUENZA WEST NILE
(6-WAY)
Prestige V + WNV/Merck

EQUINE INFLUENZA
Recombitek Equine Influenza Virus/Merial

EQUINE RHINOPNEUMONITIS (KILLED)
Prodigy with Havlogen/Merck

EQUINE RHINOPNEUMONITIS (KILLED)/EQUINE INFLUENZA
Prestige II with Havlogen/Merck

RABIES (KILLED)
EquiRab with Havlogen/Merck

STREPTOCOCCUS EQUI VACCINE (LIVE)
Pinnacle I.N./Pfizer Animal Health

TETANUS ANTITOXIN
Pfizer Animal Health

TETANUS TOXOID
Super-TET with Havlogen/Merck

WEST NILE VIRUS VACCINE
EquiNile with Havlogen/Merck
HUMAN DRUGS FOR ANIMAL USE

In veterinary medicine, both drugs approved for animal use as well as drugs approved for human use are prescribed and administered. Although the use of human drugs in animals was officially approved, October, 1994, the Center for Veterinary Medicine (CVM) has not yet issued its compliance policy guidelines (CPGs). It is assumed, however, that previous regulatory discretion will still be in effect regarding human drugs used in animals. Regulatory action will not ordinarily be considered provided all the following conditions exist:

1. Intended animal use of the human drug is not established by labeling, advertising, promotional activity, or in any other overt manner.
2. There is no approved veterinary drug version of the human drug available.
3. The human drug does not represent a significant risk to the animal when prescribed, dispensed, or administered by a veterinarian.

PRESCRIPTION DRUGS VS. OVER-THE-COUNTER DRUGS

For both human drugs and veterinary drugs, there are drugs which can only be obtained by prescription and those which can be purchased over-the-counter by laymen. Often a drug is assigned prescription status because the disease that it treats is diagnosed with some difficulty. In other cases, use of the drug is exceedingly complex, and a layman lacks the requisite training and expertise to administer the drug properly. In addition, prescription drugs tend to be quite potent. The margin of safety for use may be narrow, and adverse effects may be serious or common. Misuse or abuse potential may be cause for some drugs to be restricted to prescription use only. Veterinary prescription drugs bear the following statement on their label:

"Caution: Federal law restricts this drug for use by or on the order of a licensed veterinarian."
LEGAL CONSIDERATIONS (CONTINUED)

Human prescription drugs bear the following:

"Caution: Federal law prohibits dispensing without prescription" or "Rx Only."

Hence, prescription drugs are sometimes referred to as "legend" drugs because they bear one of these statements.

Although over-the-counter (OTC's) drugs may be purchased without a prescription, the law stipulates that these drugs be clearly labeled with adequate directions which enable a layman to use the drug safely and for the purposes for which it is intended.

VETERINARIAN-CLIENT-PATIENT RELATIONSHIP

Prescription drugs should be dispensed to clients only when a valid veterinarian-client-patient relationship (VCPR) exits. A VCPR exists when all of the following conditions have been met:

- The veterinarian has assumed the responsibility for making clinical judgments regarding the health of the animal(s) and the need for medical treatment, and the client has agreed to follow the veterinarian's instructions.

- The veterinarian has sufficient knowledge of the animal(s) to initiate at least a general or preliminary diagnosis of the medical condition of the animal(s). This means that the veterinarian has recently seen and is personally acquainted with the keeping and care of the animal(s) by virtue of an examination of the animal(s) or by medically appropriate and timely visits to the premises where the animal(s) are kept.

- The veterinarian is readily available for follow-up evaluation in the event of adverse reactions or failure of the treatment regimen.

EXTRA-LABEL USE

Use of a drug in a manner that is not in accordance with the drug's labeling is referred to as extra-label use. This includes: human drugs for animal use; veterinary drugs for non-approved species; for medical indications not mentioned in product labeling, and doses different or treatment periods greater than those stated in product information. Veterinarians are fully liable for problems which may arise from extra-label recommendations. Laymen may not legally use OTC products extra-label unless prescribed by a veterinarian.
LEGAL CONSIDERATIONS (CONTINUED)

For food-producing animals, extra-label use of drugs may be considered only in special circumstances. For such usage, the FDA specifies that the following criteria must be met:

- A careful clinical diagnosis is made by an attending veterinarian within the context of a valid VCPR.
- A determination is made that there is no marketed drug specifically labeled to treat the condition diagnosed, or that treatment at the dosage recommended by the labeling has been found clinically ineffective.
- Procedures are instituted to assure that identity of the treated animals is carefully maintained.
- A significantly extended time period is assigned for drug withdrawal prior to marketing meat, milk, or eggs; steps are taken to assure that the assigned time frames are met; and no harmful residues occur.

It is important for all drugs being used extra-label to have a prescription label affixed containing information as required by state law. Such would include the following: date dispensed, prescribing veterinarian, client, species or patient identification (name or number), and the (extra-label) directions for proper use. It is common to also include the name (brand or generic) of the product on the label although some states may not require such. **No extra-label use of cephalosporins in food animals.**

Certain drugs may not be used in treating food-producing animals even under the cited extra-label criteria. These drugs include:  
chloramphenicol  
clenbuterol  
diethylstilbestrol  
dimetridazole  
ipronidazole  
other nitroimidazoles  
furazolidone (except for approved topical use)  
nitrofurazone (except for approved topical use)  
sulfonamide drugs in lactating dairy cattle (except approved use of sulfadimethoxine, sulfabromomethazine, sulfaethoxypyridizane)
HANDLING ANTINEOPLASTIC AGENTS

1.0 Exposure Risks and Responsibilities

1.1 Antineoplastic drugs are potentially toxic (direct irritant, carcinogenic, mutagenic and teratogenic) to individuals handling and administering them. Fecal matter, urine and lab samples from animals being treated with these agents as well as contaminated bedding and bandage materials must also be handled properly to avoid unnecessary exposure. Besides exposure by direct contact, one should be aware of the possibility of inhalation of aerosolized particles and inadvertent ingestion.

1.2 Because risks to offspring are potentially greater, women who are breast feeding or pregnant should take measures to minimize their exposure to these agents. It is the responsibility of the individual to notify the in-charge faculty clinician when they are pregnant, breast feeding or trying to conceive. These individuals may also want to seek the advice of their personal physician regarding possible concerns to offspring.

2.0 Preparation, Labeling and Delivery

All injectable antineoplastics shall be prepared by trained personnel in the pharmacy's Biological Safety Cabinet (BSC) using the closed system protective appliances. These antineoplastic prescriptions shall bear a caution statement either typed directly on the attached label or via an auxiliary label indicating the preparation requires special handling. Injectable preparations in syringes or IV containers shall be placed in sealed zip lock bags to be retrieved by oncology personnel for administration.

3.0 Administration of Agents

3.1 Responsibility

Parenteral administration of antineoplastic agents is to be done only by trained hospital personnel using the closed system equipment. Students may be called upon to observe and assist but should never be directly responsible. Oral administration of these agents will, however, be the primary responsibility of student in most cases.

3.2 Protective Apparel

Protective coveralls are available from Central Supply and can be requested by anyone involved in the delivery of these agents. The minimum precautions suitable during administration of antineoplastic agents are the use of disposable latex gloves by the individual administering the agents and the individual restraining the patient. Disposable gloves should be worn for oral administration of these agents also.
3.0 Administration of Agents (cont.)

3.3 Follow-up Procedures

Needles, syringes, catheters, gauze sponges, gloves, administration sets, fluid bags and all contaminated materials should be disposed of properly in the chemotherapy collection (yellow) barrels provided. (Note: Non-biohazard waste should not be placed in these containers because of the expense and waste-management agreement.) After removal of nitrile gloves, hands should be washed thoroughly. (Note: Any hazardous drugs not used for patient therapy should be placed in chemotherapy waste receptacle for proper disposal.)

4.0 Spills and Accidental Exposure

4.1 Spills

Areas where spills of antineoplastic drugs have occurred should be marked-off by persons having witnessed the spill. The area should not be left unattended. Cleanup of the spill is the responsibility of personnel in the area where it occurred. If a spill kit is not available in the area, one may be obtained from the pharmacy. Pharmacy personnel should be contacted when spills occur not only to provide specific cleanup information for the agent but to document the incident.

4.2 Accidental Exposure

In the case of skin contact with an antineoplastic drug, the affected area should be washed thoroughly with soap and water. If an eye is affected, it should be flushed thoroughly (up to 15 minutes) with the eyelid held open. Those involved are encouraged to seek additional medical advice and treatment from a physician. The incident of skin or eye contact should be reported to the faculty clinician in charge and a written report filed with the safety officer.

5.0 Alerting Owners and Others

Cages of hospitalized animals receiving chemotherapy should be labeled with a "Chemotherapy Patient" sign so that proper precautions can be taken by those that might otherwise be exposed. There are specific procedures for cleaning as well as the handling of bedding and fecal matter from these cages. Likewise, owners of animals receiving chemotherapy should be advised of the potential hazards of the animal's waste in order to minimize health risks to themselves and others.

6.0 Handling of Cytotoxic Waste

All waste from preparation and administration of the chemotherapeutic should be placed in a receptacle that is clearly marked. The waste is accumulated until waste disposal contractor removes monthly. Waste must be picked up and disposed of by a licensed handler. Specific other waste should also be collected in appropriately marked and identified containers and disposed of by the licensed handler this includes toxic, infectious, corrosive and explosive waste.
ABBREVIATIONS USED IN PRESCRIPTION WRITING

a.m. morning                       p.r.n. as needed
b.i.d. twice a day                 q. a.m. every morning
 c with                           q.i.d.* four times a day
cap capsule                       q 4 h every four hours
Gm. gram                           q.o.d.* every other day
gr. grain                          q. p.m. every evening
gtt. a drop                        q.s. a sufficient quantity
gtts. drops                        Sig. Instructions to patient
h hour                             SC subcutaneously
IM intramuscularly                 tab tablet
non rep. do not repeat             Tbs. tablespoonful
o.d. right eye                     t.i.d. three times a day
o.s. left eye                      tsp teaspoonful
o.u. each eye
p.o. by mouth

DO NOT USE S.I.D.

Note: s.i.d., which is commonly used in veterinary medicine is NOT used in human medicine. Unfortunately deadly errors have occurred when pharmacists have attempted to decipher such. It is recommended that the English term "daily" be used.

* No longer JACO approved abbreviations
## CONVERSION TABLES

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### APPROXIMATE EQUIVALENTS

- 1 gram is 15 grains
- 1 grain is 65 mg
- 1 ml is 16 minims
- 1 dram is 4 ml
- 1 fl oz is 28 ml (approx. 30 ml)
- 1 pint is 480 ml or 16 fl oz
- 1 liter is 1.06 quarts or 33.82 fl oz
- 1 kilogram is 2.2 pounds
- 1 teaspoonful is 5 ml
- 1 tablespoonful is 3 teaspoonfuls
- 1 US gallon is 3.785 liters (3800 ml)
- 1 fl oz is 2 tablespoonfuls
- 1 US gallon is 0.8327 Imperial gallon
- 1 percent means 1 gram in 100 ml
- 1 mg is 1000 mcg
- 1 lb is 454 grams
- 1 mcg is 0.001 mg
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<thead>
<tr>
<th>Unit</th>
<th>Value</th>
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</tr>
<tr>
<td>deci</td>
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<td>unit</td>
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## EMERGENCY DRUG DOSAGES

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<th>(Concentration)</th>
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<tr>
<td>Epinephrine</td>
<td>(1:1000)</td>
<td>0.01 mg/kg IV slowly repeat at 5 minute intervals</td>
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<tr>
<td>Atropine sulfate</td>
<td>(0.5 mg/ml)</td>
<td>0.04 mg/kg, repeat at 5 minute intervals</td>
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<tr>
<td>Calcium gluconate</td>
<td>(100 mg/ml)</td>
<td>10 mg/kg, IV</td>
</tr>
<tr>
<td>Sodium bicarbonate</td>
<td>(1 meq/ml)</td>
<td>1-2 meq/kg IV after 10 minutes of CPR</td>
</tr>
<tr>
<td>Lidocaine</td>
<td>(20 mg/ml)</td>
<td>Canine only: 100 mcg/kg/min constant infusion</td>
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<tr>
<td></td>
<td></td>
<td>Canine only: 2 mg/kg IV bolus, repeat after 10 minutes</td>
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<tr>
<td></td>
<td></td>
<td>Feline: 0.2 mg/kg IV bolus in cats <strong>CAUTION IN CATS</strong></td>
</tr>
<tr>
<td>Dextrose 50%</td>
<td>(500 mg/ml)</td>
<td>0.5-1 gm/kg, dilute to 10-25% for IV</td>
</tr>
<tr>
<td>Diazepam</td>
<td>(5 mg/ml)</td>
<td>0.5 mg increments to effect for seizures (decrease in liver disease)</td>
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<tr>
<td>Electrical defibrillation</td>
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<td>Monophasic: 3-5 J/kg (external defib.)</td>
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<td>0.5-1 J/kg (internal defib)</td>
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<td>Biphasic: 1-2 J/kg (external defib)</td>
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<tr>
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<td>0.1-0.2 J/kg (internal defib)</td>
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### APPROXIMATE MILLIEQUIVALENTS AND MOLECULAR WEIGHTS OF SELECTED SALTS

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<th>Salt</th>
<th>mEq (of each ion) per Gm of Salt</th>
<th>Molecular Weight</th>
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<td>Ammonium Chloride [NH₄Cl]</td>
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<td>53.50</td>
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<tr>
<td>Calcium Chloride [CaCl₂·2H₂O]</td>
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<td>147.03</td>
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<td>Calcium Gluconate [Ca Gluconate·H₂O]</td>
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<td>Magnesium Chloride [MgCl₂·6H₂O]</td>
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<td>Magnesium Sulfate [MgSO₄·7H₂O]</td>
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<td>Potassium Chloride [KCl]</td>
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### ATOMIC WEIGHTS OF SELECTED IONS AND WATER

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<tr>
<td>Sulfate (SO₄²⁻)</td>
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<tr>
<td>Water (H₂O)</td>
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</table>
CALCULATIONS

PER CENT

Per cent (%) = parts per 100 total parts

For liquids in liquids (e.g., 70% alcohol in water)
\[ \% = \text{Volume per 100 Volumes of total mixture} \]
Note - the two Volumes may be expressed in any units,
ml/100 ml, oz/100 oz, L/100 L, etc.

Example: 70% Alcohol =
70 ml alcohol/100 ml of total mixture

For solids in solids (e.g., 0.2% nitrofurazone powder)
\[ \% = \text{Weight per 100 Weights of total mixture} \]
Note - the two Weights may be expressed in any units,
mg/100 mg, oz/100 oz, Gm/100 Gm, etc.

Example: 0.2% nitrofurazone =
0.2mg/100 mg or 2 mg/Gm

For solids in liquids (e.g., lidocaine, dextrose, etc.)
\[ \% = \frac{\text{Weight (expressed in Gm.)}}{100 \text{ parts Volume (expressed in ml.)}} \]
Note - this % is based on water as 1 ml. weighs 1 Gm.

Example: dextrose 5% =
5 Gm/100 ml or 5000 mg/100 ml or 50 mg/ml

Formula for calculating per cent or volume for a desired final volume and per cent.
\[ V_1 \times S_1 = V_2 \times S_2 \]

\[ V_1 = \text{Volume of beginning solution} \]
\[ S_1 = \text{Strength (in %) of beginning solution} \]
\[ V_2 = \text{Volume of final solution} \]
\[ S_2 = \text{Strength (in %) of final solution} \]

Note - \( V_1 \) and \( V_2 \) must be expressed in identical units

Usually one is solving for the volume \( V_1 \) of a certain strength \( S_1 \) solution needed to prepare a desired final volume \( V_2 \) and strength \( S_2 \). The equation would then be adjusted to:
\[ V_1 = \frac{V_2 \times S_2}{S_1} \]
CONSTANT RATE INFUSIONS

LIDOCAINE:
Dose: 100 mcg/Kg/minute = 109.1 ml Lidocaine 2% in each liter of fluid and deliver maintenance volumes of fluid - 66 ml/Kg/day (30 ml/lb/day).

C = Dosage of Lidocaine in mcg/Kg/minute
J = Amount of Fluid Required for 8 Hour Period
BW = Body Weight in Kg.

\[
\left[\frac{(C \times 480 \times BW)}{J}\right] / 20 = \text{ml of lidocaine (2%) per liter of fluid}
\]
Note - Set infusion pump to deliver J/8 ml/hour

DOPAMINE:
A = Dosage of Dopamine in mcg/Kg/minute
J = Amount of Fluid Required for 8 Hour Period
BW = Body Weight in Kg.

\[
\left[\frac{(A \times 480 \times BW)}{J}\right] / 40 = \text{ml of dopamine (40 mg/ml) in liter of fluid}
\]
Note - Set infusion pump to deliver J/8 ml/hour

DOBUTAMINE
P = Dosage of Dobutamine in mcg/Kg/minute
J = Amount of Fluid Required for 8 Hour Period
BW = Body Weight in Kg.

\[
\left[\frac{(P \times 480 \times BW)}{J}\right] / 12.5 = \text{ml of dobutamine (12.5 mg/ml) per liter of fluid}
\]
Note - Set infusion pump to deliver J/8 ml/hour
# ACID/BASE VALUES FOR NORMAL DOGS

Gathered by CSU Critical Care Unit

## Normal Dogs

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### Interpretation of Blood Gases

Calculate:

1. **Anion Gap (Na⁺ + K⁺) - (HCO₃ + Cl⁻)**
2. **Ventilation (pCO₂)**
3. **Oxygenation (A - a) = P_AO₂ predict* - P_AO₂ measured**
4. **Acid - Base**

\[ *P_{AO₂ \text{ predict}} = (\text{Barometric Pressure} - 47) \times 0.21 - \frac{P_{CO₂}}{0.8} \]

- OR -

\[ P_{O₂} \]

if \( FIO₂ > 0.21 \) then \( \frac{PO₂}{FIO₂} \)
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* Approximately 13 oz Unless Otherwise Stated
** Standard 8 oz Measuring Cup
*** Not Available or Not Stocked
### FELINE DIETS

#### METABOLIZABLE ENERGY

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<td>K/D</td>
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<td>L/D</td>
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<td>R/D</td>
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<td>T/D</td>
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<td>W/D</td>
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<td>Z/D</td>
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<td>METABOLIC</td>
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<td><strong>Royal Canin Diets (IVD)</strong></td>
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<tr>
<td>HYPOALLERGENIC HP</td>
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<td>HYPOALLERGENIC PR</td>
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<tr>
<td>HYPOALLERGENIC PV</td>
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<tr>
<td>RENAL SUPPORT A</td>
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<tr>
<td>RENAL SUPPORT D</td>
<td>97</td>
<td>NA</td>
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<tr>
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<td>URINARY SO</td>
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<td><strong>Purina Diets</strong></td>
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<td>DM (Diabetes Mellitus)</td>
<td>191</td>
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<td>EN (Gastroenteric)</td>
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<td>NF (Nephritis Formula)</td>
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<td>OM (Obesity Management)</td>
<td>128</td>
<td>321</td>
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<td>UR (Urinary)</td>
<td>179</td>
<td>404</td>
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<tr>
<td><strong>Iams Eukanuba</strong></td>
<td></td>
<td></td>
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<tr>
<td>INTESTINAL</td>
<td>169</td>
<td>348</td>
</tr>
<tr>
<td>MAXIMUM CALORIE</td>
<td>333 (6oz)</td>
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</tr>
<tr>
<td>RENAL</td>
<td>199</td>
<td>514</td>
</tr>
</tbody>
</table>

* Approximately 5.5oz Unless Otherwise Stated
** Standard 8 oz Measuring Cup
*** Not Available or Not Stocked
# Clinical Laboratory Test Sample Requirements and Information

Label all tubes with Case # and Owner last name; include date, time, & anticoagulant if appropriate.

<table>
<thead>
<tr>
<th>Test</th>
<th>Anticoagulant</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hematology, Retic, Platelet count, Coombs, Blood Type, *Fluid cytology</td>
<td>EDTA (Purple top)</td>
<td>Mix by inversion; &gt; 1/2 full; discard if clotted. Use EDTA &quot;bullet&quot; tubes for sample volumes 1/2 ml or less, mix WELL. Fill EDTA tube LAST.</td>
</tr>
<tr>
<td></td>
<td>Most Avian: EDTA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jays and crows: Heparin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reptile: Heparin</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ostrich: Citrate</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Mix</strong> by inversion; &gt; 1/2 full;</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>discard if clotted.</strong> Use EDTA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&quot;bullet&quot; tubes for sample volumes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/2 ml or less, mix WELL. Fill EDTA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>tube LAST.</td>
<td></td>
</tr>
<tr>
<td>Coagulation: FDP, PT, APTT, factor assays</td>
<td>Citrate; avoid trauma</td>
<td><strong>Must</strong> fill appropriately (add &quot;draw&quot; volume stated on box of tubes). Mix WELL.</td>
</tr>
<tr>
<td></td>
<td>(Blue top)</td>
<td></td>
</tr>
<tr>
<td>Chemistry, Glucose curves during lab hours</td>
<td>Most species: Lithium heparin (green top) for quicker turn-around or Clot tube (Red top). Avian or reptile: Lithium Heparin required.</td>
<td><strong>Mix</strong> if anticoagulated (heparin) and to hasten clotting (red top). Submit ≥2.0 ml blood for full panel or harvest plasma or serum w/in 1 hr. Consult lab if short draw. Fasting samples recommended for most tests. Redraw may be required if hemolyzed or lipemic.</td>
</tr>
<tr>
<td>Blood Gas, CO, MetHg (STAT)</td>
<td>1) PICO dry heparin syringe (preferred) or 2) Coat syringe with lithium heparin, expel all heparin or 3) 35-95 ul in heparinized capillary tube</td>
<td>1) 0.5-2 ml in PICO. 2) ≥ 1-2 ml w/ liquid heparin; excess heparin interferes with results. 3) Vol. varies w/ tests. All) Remove air bubbles, immediately cap, mix by inversion and rolling, test within 30 min. Redraw if clotted. Refrigerate if testing delayed.</td>
</tr>
<tr>
<td>N+/K+/Cl-, HCO3-, Ionized calcium (i-Ca++)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucose curves after lab hours</td>
<td>NaFl/ Calcium Oxalate (Grey top)</td>
<td>&gt;1/4 full; use only if unable to harvest plasma. Invert to mix.</td>
</tr>
<tr>
<td>Urinalysis</td>
<td>None. Submit at least 5 ml</td>
<td>Label syringe or cup (not lid). Refrigerate if testing delayed. Indicate sampling method.</td>
</tr>
</tbody>
</table>

**Note:** Ideal blood collection is via vacuum collection systems. If collecting blood with a syringe, remove the needle and tube cap before filling tubes to avoid hemolysis and anticoagulant contamination. Avoid EDTA contamination of chemistry tubes. **Mix repeatedly by inversion.**
Hematology: Make 2 unstained blood smears for CBC's submitted after hours; label with name, case # and date, and store at room temperature. Check EDTA tubes for clots, redraw if clotted, and refrigerate tube.

Coagulation: Avoid activating the clotting cascade by: 1) Use vacuum collection needle or butterfly catheter to fill clot or discard tube followed by citrate tube (fill to capacity). 2) Syringe: Draw exact volume of citrate followed by blood volume indicated, respectively: 0.2 ml + 1.8 ml blood; 0.3 ml citrate + 2.7 ml blood; 0.4 ml citrate + 3.6 ml blood. Remove needle and immediately transfer mixture to a PLASTIC tube (not glass). Immediately invert tube filled via either method 8-10 times to thoroughly mix. Label with “citrate”, name, case # and date. Store at room temperature and test within 4 hours or freeze.

General Chemistry: Selected tests require serum. At least 1 ml blood is necessary for a Diagnostic Panel. If the sample is short, identify test priorities. STAT Na-K-Cl, HC03, i-Ca, and/or Gluc-Lac may be performed on heparinized whole blood on analyzer in student lab by trained personnel. Heparinized plasma may be substituted for serum in most tests. EDTA plasma may be used for selected tests; consult with lab staff prior to submission. Remove serum or plasma from cells within 1 hour of sample collection. Label tube including anticoagulant used.

*Cytology: Air dry films, label with case#, date, and source. Heparin best for mucin clot on synovial fld. EDTA is best for cell preservation and morphology for all (except CSF) fluids. CSF: clot tube; submit ASAP.

Cross-match: EDTA and Clot tube from donor (or a labeled pigtail from donor unit from the pharmacy where stored) and recipient.

Urine Fractional Excretions: Urine and serum collected concurrently (w/in 24 hours of each other).

Send-Out Tests: Contact the Diagnostic Laboratory for sample requirements.

On-line Clinical Pathology results should appear on VMC VetPoint upon completion.
<table>
<thead>
<tr>
<th>TEST</th>
<th>UNITS</th>
<th>DOG</th>
<th>CAT</th>
<th>HORSE</th>
<th>CATTLE</th>
<th>GOAT</th>
<th>LLAMA</th>
<th>SHEEP</th>
<th>FERRET</th>
<th>OSTRICH</th>
</tr>
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<tbody>
<tr>
<td>CHEMISTRY</td>
<td></td>
<td>c501</td>
<td>c501</td>
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<td>c501</td>
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<td>Hit 911</td>
<td>Hit 911</td>
<td>Hit 911 (anes)</td>
<td>Hit 911</td>
</tr>
<tr>
<td>Glucose</td>
<td>mg/dl</td>
<td>70-115</td>
<td>68-140</td>
<td>70-135</td>
<td>45-80</td>
<td>45-75</td>
<td>90-140</td>
<td>70-100</td>
<td>95-140</td>
<td>180-340</td>
</tr>
<tr>
<td>Fructosamine</td>
<td>mg/dl</td>
<td>210-350</td>
<td>200-360</td>
<td>250-330</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
</tr>
<tr>
<td>BUN</td>
<td>mg/dl</td>
<td>7-30</td>
<td>18-35</td>
<td>9-22</td>
<td>7-27</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
</tr>
<tr>
<td>Creat*</td>
<td>mg/dl</td>
<td>0.6-1.6</td>
<td>0.8-2.4</td>
<td>0.7-1.8</td>
<td>0.6-1.0</td>
<td>0.4-1.5</td>
<td>1.2-2.6</td>
<td>0.5-1.6</td>
<td>0.5-0.5</td>
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</tr>
<tr>
<td>Ca</td>
<td>mg/dl</td>
<td>9.0-11.5</td>
<td>9.2-11.1</td>
<td>11.5-14.0</td>
<td>8.0-11.0</td>
<td>8.8-10.6</td>
<td>7.7-9.4</td>
<td>9.5-10.9</td>
<td>8.0-9.7</td>
<td>9.3-12.0</td>
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<tr>
<td>Phos</td>
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<td>3.0-6.0</td>
<td>1.7-4.5</td>
<td>4.2-9.3</td>
<td>2.0-10.2</td>
<td>4.6-9.8</td>
<td>5.7-9.7</td>
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<td>Mg**</td>
<td>mg/dl</td>
<td>1.8-2.4</td>
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<td>1.8-2.4</td>
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<td>Uric acid</td>
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<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>~</td>
<td>6.6-12.5</td>
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<td>T-Protein</td>
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<td>6.3-8.0</td>
<td>5.8-7.4</td>
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<td>7.1-8.6</td>
<td>5.5-7.0</td>
<td>6.4-7.8</td>
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<td>3.8-4.7</td>
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<td>1.8-2.5</td>
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<tr>
<td>Glob</td>
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<td>~</td>
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<tr>
<td>Trig^</td>
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<td>25-165</td>
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<tr>
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<tr>
<td>BA 2PP</td>
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<td>&lt;10? ND</td>
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<tr>
<td>Iron</td>
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<td>75-240</td>
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<td>110-200</td>
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<tr>
<td>Amyl</td>
<td>IU/L</td>
<td>300-1100</td>
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<tr>
<td>CK</td>
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<td>50-275</td>
<td>60-350</td>
<td>100-470</td>
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<td>AST</td>
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<td>SDH***</td>
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<tr>
<td>ALP^</td>
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<td>Na⁺</td>
<td>mEq/L</td>
<td>142-152</td>
<td>149-157</td>
<td>130-140</td>
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<tr>
<td>Cl⁻</td>
<td>mEq/L</td>
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<td>115-125</td>
<td>97-104</td>
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<td>109-117</td>
<td>106-118</td>
<td>103-113</td>
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</tr>
<tr>
<td>Anion Gap</td>
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<tr>
<td>BHBA</td>
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<td>~</td>
<td>3-11.5</td>
<td>~</td>
<td>~</td>
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</tr>
<tr>
<td>NEFA</td>
<td>mEq/L</td>
<td>~</td>
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<td>~</td>
<td>.07-.55</td>
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</tr>
<tr>
<td>Hem</td>
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<td>0-200</td>
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<td>0-25</td>
<td>0-60</td>
<td>~</td>
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<tr>
<td>Lip</td>
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<td>0-50</td>
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</tr>
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<td>1-3</td>
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n= 49-65 43 61-68 50-54 21

1/16 LVap
<table>
<thead>
<tr>
<th>TEST</th>
<th>UNITS</th>
<th>DOG</th>
<th>CAT</th>
<th>HORSE</th>
<th>FERRET</th>
<th>CATTLE</th>
<th>GOAT</th>
<th>LLAMA</th>
<th>SHEEP</th>
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<tr>
<td>HEMATOLOGY</td>
<td></td>
<td>Advia 120</td>
<td>Advia 120</td>
<td>Advia 120</td>
<td>(S+IV)</td>
<td>(S+IV)</td>
<td>Advia 120</td>
<td>(S+IV)</td>
<td>(S+IV)</td>
</tr>
<tr>
<td>P. Protein</td>
<td>G/dl</td>
<td>6.0-7.5</td>
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<td>2.0-6.0</td>
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<td>4.6-16.0</td>
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<td>200-500</td>
<td>125-300</td>
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<td>200-800</td>
<td>150-600</td>
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<td>PTT</td>
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<td>(arterial)</td>
<td>(arterial)</td>
<td>(venous)</td>
<td>(Published values)</td>
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<td>7.33-7.45</td>
<td>7.33-7.44</td>
<td>7.38-7.44</td>
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<td>7.31-7.53</td>
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<tr>
<td>PO₂</td>
<td>mmHg</td>
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<td>73-92</td>
<td>73-92</td>
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<td>35-40</td>
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<tr>
<td>PCO₂</td>
<td>mmHg</td>
<td>24-39</td>
<td>35-42</td>
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<td>35-44</td>
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<td>HCO₃</td>
<td>meq/L</td>
<td>15-24</td>
<td>16-22</td>
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<td>25-35</td>
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<tr>
<td>i-Ca++</td>
<td>mmol/L (corr)</td>
<td>1.12-1.4</td>
<td>1.2-1.32</td>
<td>1.25-1.75</td>
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<td>1.0-1.25</td>
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<tr>
<td>Lactate</td>
<td>mmol/L</td>
<td>0.2-1.44</td>
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<td>1.11-1.78</td>
<td>~</td>
<td>0.56-2.22</td>
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<td>~</td>
<td>1.00-1.33</td>
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<tr>
<td>*HbCO</td>
<td>%</td>
<td>&lt;3</td>
<td>&lt;3</td>
<td>&lt;3</td>
<td>~</td>
<td>~</td>
<td>~</td>
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<td>~</td>
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<tr>
<td>*MetHb</td>
<td>%</td>
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<td>~</td>
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<td>Na⁺</td>
<td>%</td>
<td>0-0.7</td>
<td>0.24-1.0</td>
<td>0.02-1.0</td>
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<td>0.2-1.43</td>
<td>~</td>
<td>~</td>
<td>~</td>
</tr>
<tr>
<td>K⁺</td>
<td>%</td>
<td>0-20.0</td>
<td>6.7-23.9</td>
<td>15.0-65.0</td>
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<td>15.0-63.0</td>
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<td>Cl⁻</td>
<td>%</td>
<td>0-0.8</td>
<td>0.41-1.3</td>
<td>0.04-1.6</td>
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<td>0.4-2.3</td>
<td>~</td>
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<td>~</td>
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<td>Phos</td>
<td>%</td>
<td>2.5-6.0</td>
<td>17-73</td>
<td>0-0.5</td>
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<td>~</td>
<td>~</td>
<td>LVap 1/16</td>
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# CSU-VTH Clinical Pathology Reference Ranges

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<th>DOG</th>
<th>CAT</th>
<th>HORSE</th>
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<td>(arterial)</td>
<td>(arterial)</td>
<td>(venous)</td>
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<td>7.33-7.44</td>
<td>7.38-7.44</td>
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<tr>
<td>***PO2</td>
<td>mmHg</td>
<td>67-92</td>
<td>73-92</td>
<td>62-96</td>
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<td>***PCO2</td>
<td>mmHg</td>
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<td>35-42</td>
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<td>*Lactate</td>
<td>mmol/L</td>
<td>0.2-1.44</td>
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<td>1.11-1.78</td>
<td>0.56-2.22</td>
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<td>§HCO3</td>
<td>meq/L</td>
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<td>16-22</td>
<td>22-30</td>
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<tr>
<td>Na</td>
<td>mEq/L</td>
<td>142-152</td>
<td>148-158</td>
<td>130-142</td>
<td>136-147</td>
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<td>K</td>
<td>mEq/L</td>
<td>3.5-5.2</td>
<td>3.5-5.2</td>
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<td>Cl</td>
<td>meq/L</td>
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<td>116-126</td>
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<td>§Gap</td>
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<td>15-25</td>
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<td>i-Ca (corr)</td>
<td>mEq/L</td>
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<td>1.3-1.4</td>
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<td><strong>COOX</strong></td>
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<td>&lt;3</td>
<td>&lt;3</td>
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<tr>
<td>*MetHb</td>
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*Published values (Kaneko)
**OSM3 data from 43 dog, cat and horse samples 12/04
***From ABL505
§Hitachi 917; may not reflect ABL805 results
Other data from Hitachi 917/ABL805 correlations
DRUG WITHDRAWAL PERIODS

FOR

BEEF CATTLE AND CALVES

DAIRY CATTLE AND CALVES

SHEEP AND GOATS

SWINE

The following drug withdrawal information provided by the F.D.A. is to be used only as a guide. Since there will be continuous additions, changes and deletions, one must maintain his or her own current list for products used in food animals or food producing animals. Fortunately this information can be frequently obtained from the product label or insert.

For additional withdrawal information, particularly for products being used extra-label, contact the Food Animal Residue Avoidance Databank (FARAD) at:

Phone: 888-873-2723
Web Site: www.farad.org/

INFORMATION ABOUT THIS GUIDE

This is not intended to be a complete list of active ingredients or brand names available on the market. The brand names are used as examples only and their listing in no way implies any product endorsement.

Withdrawal times listed correspond to the product being used according to the directions on the product label or accompanying literature. Withdrawal times listed may not apply if other drugs or pesticides requiring pre-slaughter withdrawal times have been used in the intended species.

Withdrawal times may change on certain entities during the life of this Formulary edition. Follow drug labels, package inserts, or feed tags for up-to-date information on exact usage of the products. There is no attempt to list drug use information other than the withdrawal times.

New guidelines (2012) for “label use only” for cephalosporins appear in the main section of the Formulary under the individual drug.
### BEEF CATTLE DRUG LIST

**INJECTABLE USE**

<table>
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<tr>
<th>Active Ingredients</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
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</thead>
<tbody>
<tr>
<td>Amoxicillin Trihydrate</td>
<td>25</td>
<td>AMOXI-INJECT</td>
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<tr>
<td>Ampicillin Trihydrate</td>
<td>6</td>
<td>POLYFLEX</td>
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<tr>
<td>Ceftiofur</td>
<td>4</td>
<td>NAXCEL</td>
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<tr>
<td>Certiofur Crystalline Free Acid</td>
<td>13</td>
<td>EXCEDE</td>
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<tr>
<td>Erythromycin</td>
<td>14</td>
<td>GALLIMYCIN 200</td>
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<tr>
<td>Ivermectin</td>
<td>35</td>
<td>IVOMEC INJECTION</td>
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<td>Oxytetracycline</td>
<td>18</td>
<td>OXYBIOTIC-P</td>
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<td>20</td>
<td>OXY-TET 50; OXY-TET 100</td>
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<td></td>
<td>22</td>
<td>AQUACHELLE 100</td>
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<td>20</td>
<td>OXYJECT</td>
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<td></td>
<td>22</td>
<td>OXYTETRACYCL HCL; TERRAMYCIN</td>
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<td>28</td>
<td>LIQUAMYCIN LA-200</td>
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<tr>
<td>Procaine penicillin G AQUEOUS SOLUTION</td>
<td>5 - 30 *</td>
<td>PRO-PEN G IN</td>
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<tr>
<td>Timicosin Phosphate</td>
<td>28</td>
<td>MICOTIL-300</td>
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<td>Tylosin</td>
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<td>Tulathromycin</td>
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<td>Draxxin</td>
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*Varies from product to product. Read the label.*
### BEEF CATTLE DRUG LIST (Cont.)

#### ORAL USE

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<td>Amprolium</td>
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<td>CORID</td>
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<td>Levamisole</td>
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<td>Melengestrol acetate</td>
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<td>MGA-100; MGA-500</td>
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<td>Ronnel</td>
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<td>Sulfadimethoxine</td>
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<td>AGRIBON; ALBON</td>
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<td>Tetracycline soluble</td>
<td>5 (SOLUBLE POWDER)</td>
<td>TETRACYCLINE HCL powder</td>
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<td>SULMET POWDER</td>
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<td>Thiabendazole</td>
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<td>OMNIZOLE; THIBENZOLE</td>
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#### TOPICAL USE

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<th>Active Ingredients</th>
<th>Days</th>
<th>Brand Name Examples</th>
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<tr>
<td>Famphur INSECTICIDE; PURINO FAMPUR POUR-ON CATTLE</td>
<td>35</td>
<td>BO-ANA FAMPHUR CATTLE GRUB-KILL; WARBEX INSECTICIDE 13.2%</td>
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<td>Fenthion</td>
<td>35 (add 45 days if retreated)</td>
<td>TIGUVON POUR-ON</td>
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<td>45</td>
<td>SPOTTON CATTLE INSECTICIDE</td>
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<td>Ivermectin</td>
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<td>IVOMEC POUR-ON</td>
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<tr>
<td>Levamisol</td>
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### BEEF CATTLE DRUG LIST (Cont.)

#### IMPLANT USE

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<td>Estradiol</td>
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<td>SYNCRO-MATE-B</td>
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<tr>
<td>Estradiol benzoate and testosterone propionate</td>
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<td>SYNOVEX</td>
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<td>Progesterone and estradiol benzoate</td>
<td>60</td>
<td>SYNOVEX-S STEER FINISHING IMPLANTS</td>
</tr>
<tr>
<td>Zeranol</td>
<td>0</td>
<td>RALGRO IMPLANTS</td>
</tr>
</tbody>
</table>

#### BEEF CALF DRUG LIST

#### INJECTABLE USE

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erythromycin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Levamisole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxytetracycline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Procaine penicillin G</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfamethazine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tylosin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Withdrawal times for these drugs are listed in the Beef Cattle section of this publication.

#### ORAL USE

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlortetracycline hydrochloride</td>
<td>3</td>
<td>ANCHOR CHLORTETRA-CYCLINE PNEUMONIA/CALF SCOUR BOLUSES; VI-MYCIN; KLORETET; CHLORTETRACYCLINE SOLUBLE POWDER CONCENTRATE</td>
</tr>
<tr>
<td>Amprolium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Levamisole</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ronnel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfadimethoxine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfamethazine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tetracycline</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Withdrawal times for these drugs and for topical use in calves are listed in the Beef Cattle section of this publication.

#### IMPLANT USE

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zeranol</td>
<td>65</td>
<td>RALGRO IMPLANTS</td>
</tr>
</tbody>
</table>
## DAIRY CATTLE DRUG LIST

### NON-LACTATING COWS (Injectable Use)

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxytetracycline</td>
<td>15</td>
<td>TERRAMYCIN 100</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>OXY-TET 50; OXY-TET 100</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>AQUACHELLE-100; RACHELLE OXYVET INJ; OXYVET-100</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>OXYJECT</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>OXYTETRACYCLINE HCL</td>
</tr>
<tr>
<td>Ceftriaxone</td>
<td>0</td>
<td>NAXCEL</td>
</tr>
<tr>
<td>Ceftriaxone Crystalline Free Acid</td>
<td>0</td>
<td>EXDEDE</td>
</tr>
<tr>
<td>Sulfamethazine</td>
<td>10</td>
<td>SULMET 25%</td>
</tr>
<tr>
<td>Tylosin</td>
<td>21</td>
<td>TYLAN-50; TYLAN-200</td>
</tr>
</tbody>
</table>

### NON-LACTATING COWS (Oral Use)

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Famphur (feed)</td>
<td>4</td>
<td>FAMIX FAMPHUR PREMIX</td>
</tr>
<tr>
<td>Furosemide</td>
<td>2</td>
<td>LASIX TABLETS</td>
</tr>
<tr>
<td>Ronnel (feed)</td>
<td>10 (before slaughter or freshening)</td>
<td>TROLENE 18%; INSECTICIDAL SALT PREMIX</td>
</tr>
<tr>
<td>Sulfadimethoxine</td>
<td>7</td>
<td>ALBON 2.5 GM BOLUS; AGRIBON 2.5 GM BOLUS; ALBON S-R BOLUS</td>
</tr>
<tr>
<td>Sulfamethazine</td>
<td>28</td>
<td>SPANBOLET II BOLUS</td>
</tr>
</tbody>
</table>
### NON-LACTATING COWS (Topical Use)

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
</table>
| Famphur             | 35              | ANCHOR FAMPHUR POUR-0N  
                      |                  | BON-ANA FAMPHUR CATTLE INSECTICIDE; PURINA FAMPHUR POUR-ON |
|                     |                 | GRUB KILL; WARBEX INSECTICIDE 13.2% |
| Fenthion            | 35              | TIGUVON POUR-ON     |
|                     | (add 45 days if retreated) |                         |

### LACTATING COWS (Injectable Use)

If you collect milk on Monday morning and give a drug with a 48-hour discard time, you must discard the milk collected in the next four milkings. Only the milk from your Wednesday evening milking may be marketed without the risk of illegal drug residues. Note that a full 48 hours has passed between use of the drug and the last time milk must be discarded.

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Milk Discard Milkings (hrs)</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoxicillin Trihydrate</td>
<td>8 (96)</td>
<td>25</td>
<td>AMOXI-INJECT</td>
</tr>
<tr>
<td>Ampicillin Trihydrate</td>
<td>4 (48)</td>
<td>6</td>
<td>POLYFLEX</td>
</tr>
<tr>
<td>Ceftiofur</td>
<td>0 (0)</td>
<td>0</td>
<td>NAXCEL</td>
</tr>
<tr>
<td>Ceftiofur Crystalline FA</td>
<td>0 (0)</td>
<td>0</td>
<td>EXCEDE</td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>0 (0)</td>
<td>0</td>
<td>--</td>
</tr>
<tr>
<td>Erythromycin</td>
<td>6 (72)</td>
<td>14</td>
<td>ERYTHROCIN INJECTABLE</td>
</tr>
<tr>
<td>Furosemide</td>
<td>4 (48)</td>
<td>2</td>
<td>LASIX INJ</td>
</tr>
<tr>
<td>Procaine penicillin G</td>
<td>6 (72) *</td>
<td>10</td>
<td>PRO-PEN G</td>
</tr>
<tr>
<td>Sulfadimethoxine</td>
<td>5 (60)</td>
<td>5</td>
<td>AGRIBON INJ 40% FOR CATTLE</td>
</tr>
</tbody>
</table>

* Varies from product to product. Read the label.
### LACTATING COWS (Oral Use)

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Milk Discard Milkings (hrs)</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfadimethoxine</td>
<td>5 (60)</td>
<td>7</td>
<td>AGRIBON 2.5 GM BOLUS; ALBON 2.5 GM BOLUS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thiabendazole</td>
<td>8 (96)</td>
<td>3</td>
<td>OMNIZOLE 6.6% WORMER CRUMBLES TBZ WORMER PASTES; THIBENZOLE (15 GM)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### INTRAMAMMARY INFUSION DRUGS

### DRY COW USE

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Milk Discard Time</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzathine cloxacillin</td>
<td>28 days</td>
<td>28</td>
<td>ORBENIN-DC</td>
</tr>
<tr>
<td></td>
<td>a</td>
<td>30</td>
<td>DRY-CLOX</td>
</tr>
<tr>
<td></td>
<td>a + b</td>
<td>c</td>
<td>BOVICLOX</td>
</tr>
<tr>
<td>Cephapirin benzathine</td>
<td>a + b</td>
<td>42</td>
<td>CEFA-DRI</td>
</tr>
</tbody>
</table>

(a) Not to be used within 30 days of calving.
(b) Milk taken from treated cows prior to 72 hours after calving must not be used for food.
(c) Not to be slaughtered for food from time of infusion until 72 hours after calving.
### INTRAMAMMARY INFUSION DRUGS (Cont.)

#### DRY COW USE

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Milk Discard Time</th>
<th>Withdrawal Days</th>
<th>Brand Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novobiocin</td>
<td>a</td>
<td>30</td>
<td>BIODRY; DRYGARD</td>
</tr>
</tbody>
</table>

(a) Not to be used within 30 days of calving.

#### LACTATING COW USE

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Milk Discard Time</th>
<th>Withdrawal Days</th>
<th>Brand Name</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novobiocin</td>
<td>72 hours</td>
<td>15</td>
<td>ALBAMEST</td>
<td></td>
</tr>
<tr>
<td>Penicillin and novobiocin</td>
<td>72 hours</td>
<td>15</td>
<td>ALBACILLIN; SPECIAL FORMULA 17900-FORTE</td>
<td></td>
</tr>
<tr>
<td>Potassium hetacillin</td>
<td>72 hours</td>
<td>10</td>
<td>HETACIN-K</td>
<td></td>
</tr>
<tr>
<td>Procaine penicillin G</td>
<td>60 hours</td>
<td>4</td>
<td>AQUA-PEN; FOUR-PEN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60 hours</td>
<td>3</td>
<td>FORMULA #1200; FORMULA A-34; TRUE ANTI-BIOTIC-10</td>
<td></td>
</tr>
<tr>
<td>Sodium cephapirin</td>
<td>96 hours</td>
<td>4</td>
<td>CEFA-LAK</td>
<td></td>
</tr>
<tr>
<td>Sodium cloxacillin</td>
<td>48 hours</td>
<td>10</td>
<td>DARICLOX</td>
<td></td>
</tr>
</tbody>
</table>

#### DRY OR LACTATING COW USE

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Milk Discard Time</th>
<th>Withdrawal Days</th>
<th>Brand Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erythromycin</td>
<td>36</td>
<td>None established</td>
<td>GALLIMYCIN 36 SOLUTION</td>
</tr>
<tr>
<td>Oxytetracycline HCl</td>
<td>96</td>
<td>4</td>
<td>LIQUAMAST</td>
</tr>
</tbody>
</table>
## DAIRY CALF DRUG LIST

### DAIRY CALF DRUGS (Injectable Use)

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoxicillin Trihydrate</td>
<td>25</td>
<td>AMOXI-INJECT</td>
</tr>
<tr>
<td>Ampicillin Trihydrate</td>
<td>6</td>
<td>POLYFLEX</td>
</tr>
<tr>
<td>Ceftriaxone</td>
<td>0</td>
<td>NAXCEL</td>
</tr>
<tr>
<td>Erythromycin</td>
<td>14</td>
<td>ERYTHROMYCIN INJ.</td>
</tr>
<tr>
<td>Levamisole</td>
<td>7</td>
<td>RIPERCOL L; TRAMISOL</td>
</tr>
<tr>
<td>Oxytetracycline</td>
<td>15</td>
<td>TERRAMYCIN 100</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>OXY-TET 50; OXY-TET 100</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>AQUACHELLE 100</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>OXYJECT</td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>OXYTETRACYCLINE HCL; TERRAMYCIN</td>
</tr>
<tr>
<td>Procaine penicillin G</td>
<td>7 - 10 *</td>
<td>PRO-PEN G</td>
</tr>
<tr>
<td>Sodium sulfachlorpyridazine</td>
<td>5</td>
<td>PRINZONE INJECTABLE; VETISULID INJECTABLE</td>
</tr>
<tr>
<td>Sulfamethazine</td>
<td>10</td>
<td>SULMET SOLUTION INJECTABLE 12.5%</td>
</tr>
<tr>
<td>Sulfadimethoxine</td>
<td>5</td>
<td>AGRIBON INJECTION 40% FOR CATTLE</td>
</tr>
<tr>
<td>Tylosin</td>
<td>21</td>
<td>TYLAN 50; TYLAN 100</td>
</tr>
</tbody>
</table>

* Varies from product to product. Read the label.
<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ampicillin trihydrate</td>
<td>20</td>
<td>SOLUBLE POWDER</td>
</tr>
<tr>
<td>(non-ruminating calves)</td>
<td>7 - 20 *</td>
<td></td>
</tr>
<tr>
<td>Amprolium</td>
<td>1</td>
<td>AMPROLIUM 0.025% AND 0.0125%; AMPROL SOLUBLE POWDER; AMPROVINE 25%; CORID</td>
</tr>
<tr>
<td>Chlortetracycline hydrochloride</td>
<td>1</td>
<td>VI-MYCIN (water)</td>
</tr>
<tr>
<td>Haloxon</td>
<td>7</td>
<td>LOXON BOLUS</td>
</tr>
<tr>
<td>Levamisole hydrochloride</td>
<td>2</td>
<td>LEVASOLE CATTLE WORMER BOLUS</td>
</tr>
<tr>
<td>Streptomycin</td>
<td>2</td>
<td>VETSTREP 25%; BIOTEC 25% SOLUTION</td>
</tr>
<tr>
<td>Sulfabromomethazine</td>
<td>18</td>
<td>SULFABROM</td>
</tr>
<tr>
<td>Sulfachlorpyridazine</td>
<td>7</td>
<td>VETISULID BOLUS; PRINZONE BOLUS</td>
</tr>
<tr>
<td>Sulfadimethoxine</td>
<td>7</td>
<td>AGRIBON SOLUBLE PWD; ALBON 12.5% DRINKING WATER SOLUTION</td>
</tr>
<tr>
<td>Sulfamethazine</td>
<td>10</td>
<td>SULMET OBLET</td>
</tr>
<tr>
<td>Tetracycline hydrochloride (water)</td>
<td>5</td>
<td>TETRACYCLINE-VET SOLUBLE POWDER; TETRA-SOL</td>
</tr>
<tr>
<td>Thiabendazole</td>
<td>3</td>
<td>OMNIZOLE 6.6%; WORMER CRUMBLIES; THIBENZOLE 100</td>
</tr>
</tbody>
</table>

* Varies from product to product. Read the label.
### DAIRY CALF DRUGS (Topical Use)

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Famphur</td>
<td>35</td>
<td>ANCHOR FAMPHUR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>POUR-ON; BO-ANA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GRUB-KILL; WARBEX</td>
</tr>
<tr>
<td></td>
<td></td>
<td>INSECTICIDE 13.2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>FAMPHUR POUR-ON CATTLE</td>
</tr>
<tr>
<td>Fenthion</td>
<td>35</td>
<td>TIGUVON POUR-ON</td>
</tr>
<tr>
<td></td>
<td>(add 45 days if retreated)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>SPOTTON CATTLE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>INSECTICIDE</td>
</tr>
</tbody>
</table>
### SHEEP AND GOATS DRUG LIST

#### INJECTABLE USE

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Milk Discard Milkings (hrs)</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erythromycin (sheep only)</td>
<td>--</td>
<td>3</td>
<td>ERYTHRO-100</td>
</tr>
<tr>
<td>Procaine penicillin G</td>
<td>6 (72)</td>
<td>5</td>
<td>PRO-PEN G</td>
</tr>
<tr>
<td>Sulfamethazine (sheep only)</td>
<td>--</td>
<td>10</td>
<td>SULMET 12.5%</td>
</tr>
</tbody>
</table>

#### ORAL USE

| 4-tert-Butyl-2-chlorophenyl methyl methylphosphoramidate | -- | 14 | RUELENE |
| Levamisole (sheep only)                          | -- | 3  | RIPERCOL; TRAMISOL |
| Thiabendazole                                    | 8 (96) | 30 | E-Z EX WORMER; OMNIZOLE; THIBENZOLE |

#### IMPLANTS

| Zeranol (feedlot lambs only) | -- | 40 | RALGRO IMPLANTS |

#### INTRAVAGINAL USE

| Flurogestone acetate (sheep only) | -- | 30 | SYNCRO-MATE |
## SWINE DRUG LIST

### INJECTABLE USE

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceftriaxone</td>
<td>4</td>
<td>NAXEL</td>
</tr>
<tr>
<td>Ceftriaxone Crystalline Free Acie</td>
<td>14</td>
<td>EXCEDE</td>
</tr>
<tr>
<td>Erythromycin</td>
<td>2</td>
<td>GALLIMYCIN</td>
</tr>
<tr>
<td>Lincomycin</td>
<td>2</td>
<td>LINCOCIN</td>
</tr>
<tr>
<td>Oxytetracycline</td>
<td>20</td>
<td>OXYJECT 100</td>
</tr>
<tr>
<td>Oxytetracycline</td>
<td>22</td>
<td>TERRAMYCIN</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>OXY-TET 50</td>
</tr>
<tr>
<td>Procaine penicillin G</td>
<td>5</td>
<td>PRO-PEN G</td>
</tr>
<tr>
<td>Sulfamethazine</td>
<td>15</td>
<td>SULMET</td>
</tr>
<tr>
<td>Tylosin</td>
<td>4</td>
<td>TYLEN 50; TYLEN 200</td>
</tr>
<tr>
<td>Tularthromycin</td>
<td>5</td>
<td>Draxxin</td>
</tr>
</tbody>
</table>

### ORAL USE

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Withdrawal</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsanilic acid</td>
<td>5</td>
<td>PRO-GEN-PLUS</td>
</tr>
<tr>
<td>Carbadox</td>
<td>70 (10 weeks)</td>
<td>MECADOX</td>
</tr>
<tr>
<td>Chlortetracycline (water)</td>
<td>5</td>
<td>AUREOMYCIN</td>
</tr>
<tr>
<td>Chlortetracycline (water)</td>
<td>5</td>
<td>ANCHOR SCOURS/ PNEUMONIA ANTI-BOTIC</td>
</tr>
<tr>
<td>Chlortetracycline bisulfate and sulfamethazine (water)</td>
<td>15</td>
<td>AUREOMYCIN-SULMET</td>
</tr>
</tbody>
</table>
### SWINE DRUG LIST ORAL USE (Cont.)

<table>
<thead>
<tr>
<th>Active Ingredients</th>
<th>Withdrawal Days</th>
<th>Brand Name Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furazolidone</td>
<td>5</td>
<td>FUROX; NF-180</td>
</tr>
<tr>
<td>Hygromycin B</td>
<td>15</td>
<td>HYGROMIX</td>
</tr>
<tr>
<td>Levamisole (feed or water)</td>
<td>3</td>
<td>RIPERCOL L; TRAMISOL</td>
</tr>
<tr>
<td>Lincomycin (feed)</td>
<td>6</td>
<td>LINCOMIX 20</td>
</tr>
<tr>
<td>Pyrantel tartrate</td>
<td>1</td>
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CLOPIDOGREL

CLOMIPRAMINE

Clomicalm

CliniCare

CLINDAMYCIN

Clavamox

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**PHARMACY**

**VETERINARY TEACHING HOSPITAL**

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