

MEDICATIONS

Medications are typically selected based on blood work and culture results from urine or tissue samples that have confirmed the presence of specific microorganisms. Blood samples are compared with baseline data obtained from healthy animals to determine additional information. Due to the small size of insectivorous bats, however, it is not possible to obtain sufficient quantities of tissue samples for culturing or comparison with baseline data.

The author cautions against the indiscriminate use of broad-spectrum antibiotics when time allows culture and sensitivity results that would permit the use of a more specific antibiotic. However, when time of the essence, and/or access to culture and sensitivity results are not available, the use of broad-spectrum antibiotics has allowed bat care specialists to save animals with clinical signs formerly associated with high mortality.

Except when indicated, medications should always be administered with food. The use of medications for bats is extra-label drug use and no claims can be made for the efficacy or safety of the dosages.

Note: The recommended dosages for many of the medications used to treat conditions in bats as described in this book are significantly higher than those used to treat other mammals. Nonetheless, careful observation and trial and error by the author for a period of almost 30 years have led to treatments that have proven successful for ameliorating a variety of clinical signs of disease in insectivorous bats.

ANALGESICS	*Dose/g bw	DOSAGE	DURATION	WARNINGS
Cetacaine® Topical gel		Apply small amount onto mucus membranes where pain control is required.	Topical anesthesia occurs within 30 seconds and lasts 30 to 60 minutes.	Do not use in the eyes. Localized allergic reactions may occur after prolonged or repeated use.
Metacam® Oral Suspension Meloxicam, 1.5mg/ml (NSAID)	0.002ml/g	0.02ml PO, BID	Unknown in insectivorous bats. Has been used for 30 continuous days without incident. Can be given with Tramadol for increased efficacy.	Do not use in conjunction with corticosteroids, ketoprofen, aspirin or any other NSAID drug as intestinal bleeding and gastrointestinal ulceration may result.
Buprenex Injectable Buprenorphine 0.3mg/ml	0.0001ml/g	0.02ml PO, BID May be applied to the gums to be absorbed through mucous membrane.	Up to 5 days	Vomiting, diarrhea, loss of appetite, sedation, tremor, hypoventilation, dyspnea and cyanosis can occur.
ANESTHETICS	Dose/g bw	DOSAGE	DURATION	WARNINGS
Isoflurane Inhalant Anesthetic	NA	See Anesthesia or Euthanasia.	See Anesthesia or Euthanasia.	Isoflurane is not significantly metabolized; therefore, toxic metabolites are not produced.
Telazol®, Diazepam and Ketamine		Do not use		Serious adverse reactions leading to death.

ANTIBIOTICS	Dose/g bw	DOSAGE	DURATION	CAUTIONS
Amoxicillin Oral Suspension, 50mg	0.005ml/g	0.05ml PO, BID	14 to 30 days	Side effects can include loss of appetite and vomiting.
Baytril® Injectable Solution Enrofloxacin 2.27%		Do not use		Has been associated with birth defects and stillborn pups in <i>T. brasiliensis</i>
Cephalexin 250mg/5ml	0.005ml/g	Mix 5ml (one tsp) water with 8gm (one tsp) Cephalexin. Administer 0.05ml PO, BID	14 to 30 days	Keep refrigerated.
Clavamox® Drops (Amoxicillin trihydrate/Clavulanate potassium).	0.005ml/g	Reconstitute with 14ml water. Administer 0.05ml PO, BID.	14 to 30 days (Continue for 48 hours after bat is asymptomatic.)	Keep refrigerated. Discard after ten days. Do not use if mixture becomes discolored.
Clindamycin Injectable Solution 300mg/2ml	0.15 ml/g	Mix 0.10ml with 0.90 ml sterile water to lessen sting. Dose 0.10ml, SQ, SID. Store unused mixture for subsequent use.	7 to 21 days	Localized pain associated with injection. Side effects are uncommon and may include vomiting.
Convenia® 80mg/ml	SQ: 0.068 mg/g	Use a sterile collection tube to dissolve 0.2g in 1ml sterile water. Mix to dissolve powder. Administer 0.10ml SQ.	One dose only. Can be repeated in two weeks if needed.	Localized pain associated with injection. Powder must be kept refrigerated. Store mixed solution in refrigerator for up to two weeks..
Doxycycline 25mg/5ml	0.005 ml/g	Reconstitute according to directions. Administer 0.05ml PO, BID	21 days	Administer with food. May cause light sensitivity.
Penicillin G Procaine 300,000 units per ml (Procaine hydrochloride 130.8 mg - local anesthetic)	0.001ml/g	Mix 0.10ml with 0.90 ml sterile. Dose 0.10ml of this mixture SQ, SID. Refrigerate unused solution for subsequent use.	10 to 14 days	Side effects may include vomiting, diarrhea, muscle spasms, muscle pain, and headache.
Veraflox® Pradofloxacin oral suspension, 25 mg/ml.	0.125ml/g	0.05ml PO, SID	Up to 21 days	Side effects are not common but can include vomiting and loss of appetite.
ANTICONVULSANT	Dose/g bw	DOSAGE	DURATION	WARNING
Zonisamide Capsules 25mg	0.5 mg/ml	Dissolve the contents of one-half a capsule into 25ml of simple syrup. 0.1ml to 0.15ml PO, BID	Ongoing as needed. Do not stop medication abruptly. Rather, decrease dose by smaller amounts each week for two weeks.	Keep refrigerated. Shake before using. Discard after one month. Can cause drowsiness, decreased appetite, coordination issues, skin rash, itching, facial swelling, confusion, nausea, vomiting and change in temperament.
ANTIFUNGALS	Dose/g bw	DOSAGE	DURATION	WARNING
Biogamma <i>Pythium oligandrum</i> cream	NA	Gently massage on affected areas once daily	Until condition is cleared.	No adverse effects

ANTI-GAS	Dose/g bw	DOSAGE	DURATION	WARNING
Simethicone	0.003 to 0.005mg/g	0.03ml to 0.05ml PO every 2 hours as needed.	24 to 48 hours	No adverse effects
Bene-Bac™ Gel	NA	Add 0.05ml orally or to every 5ml of milk formula. PO, SID	As needed for bloat or until antibiotic treatment is complete.	No adverse effects. Do not use if spoiled (smells rancid).
ANTHELMINTICS	Dose/g bw	DOSAGE	DURATION	WARNING
Valbazen® Albendazole 113.6mg/ml	0.0004ml/g	0.007ml PO, SID.	3 days	Do not administer to pregnant bats.
Albon Oral suspension 5% Sulfadimethoxine 50mg/ml	0.002ml/g	0.02ml PO, SID	5 to 10 days (continue for 48 hours after bat is asymptomatic.)	Use with caution on sick, weak, or underweight bats.
Panacur Suspension Fenbendazole 100 mg/ml	0.005ml/g	0.05ml PO, SID.	One dose weekly for three weeks	Do not administer with flukicides. May be given with Valbazen. If bats appear weak, administer every other day for 10 days.
Revolution™ Selamectin	NA	0.005ml applied directly onto the skin of the tail membrane.	One dose only	Use with caution on sick, weak, or underweight bats.
ANTIMICROBIALS	Dose/g bw	DOSAGE	DURATION	WARNING
Manuka honey Active UMF16+	NA	Apply topically to the wound and surrounding tissue.	Until injury is healed. Do not clean hardened layers of Manuka honey from the wound as it acts as a protective layer. Instead, apply as needed to keep the wound covered.	Thoroughly drain abscesses before applying. Drain abscesses daily or as needed, then reapply Manuka.
Nolvasan™ Solution chlorhexidine diacetate	NA	Dilute with water to 10% Flush affected areas twice a day.	One to two applications.	Can cause eye irritation. Avoid getting into eyes.
Chlor-a-Flush Lidocaine 0.5%, chlorhexidine 0.2% solution	NA	Apply liberally to affected area.	Two to three times daily or as necessary, until healing is complete.	Can cause eye irritation. Avoid getting into eyes.
OraVet	NA	Use a cotton swap to apply a thin layer of gel to the teeth.	Apply once weekly to control plaque and tartar.	No adverse effects
CORTICOSTEROID	Dose/g bw	DOSAGE	DURATION	WARNING
Dexamethasone Injectable Solution 2mg/ml	0.003ml/g	Mix 0.03ml dexamethasone with 0.25ml LRS and administer entire dose SQ, BID. Warm fluids before injecting.	2 to 7 days. When given for more than 3 days, taper dose by administering SID for 2 days, then SID every other day for 4 days.	May cause excessive thirst and urination. Do not use in conjunction with NSAIDS as gastric bleeding may result.
DIURETIC	Dose/g bw	DOSAGE	DURATION	WARNING
Lasix® Furosemide	0.0001 mg/g	0.01ml administered orally	One to two doses only for bloat caused by hypoproteinemia.	May cause appetite loss, diarrhea, thirst, nausea and vomiting.

SYMPATHOMIMETIC	Dose/g bw	DOSAGE	DURATION	WARNING
Epinephrine 1:1000 Sterile Solution	0.01mg/5g	Mix 0.1ml epinephrine with 9.0ml sterile water. Inject 0.01ml SQ per every 5 grams of body weight.	Dramatic improvement should be seen within five to 10 minutes. Inject an additional dose if symptoms are not alleviated within 20 minutes.	An additional dose will be needed if symptoms return.
ELECTROLYTES	Dose/g bw	DOSAGE	DURATION	WARNING
Electrolyte Solution Parenteral fluids - Lactated Ringers, Normosol, Plasmalyte	NA	See Dehydration and Fluid Replacement Therapy	Until bat is fully hydrated.	Except when heat exhaustion/stroke is suspected, always warm fluids before a SQ injection. Excess fluids can accumulate in the head, neck, and wrists. In severe cases fluid can accumulate in the lungs.
NUTRICETICALS	Dose/g bw	DOSAGE	DURATION	WARNING
Progenix Recovery ` Hydrolyzed protein	NA	Mix 1-part Progenix Recovery to 1 part water. Administer up to 1.0ml.	24 hours, then switch to soft food diet.	Can result in diarrhea if used in excess. As soon as improvement is noted, switch to soft food.
Calsorb® Gel , 170mg/ml Calcium supplement	NA	For pups and adults: 0.02ml to 0.04ml PO, SID.	1 to 2 doses only	Is extremely bitter. Should be given with honey to help mask the taste.
Denosyl Tablets S-Adenosylmethionine 90mg) or SAM e	0.005ml/g	Dissolve one 90mg Denosyl® tablet in 5.0ml water. Slip the brown coating off the tablet as soon as it has softened. Continue dissolving the tablet in the water. Administer 0.05ml PO, BID.	10 to 14 days	Should be given on an empty stomach. Can be mixed with soft food.
Milk Thistle Alcohol free liquid	NA	Administer 0.05ml to 1.0ml twice daily	10 to 14 days.	Side effects are rare but can include itching and diarrhea.
Pet-Tinic® Iron supplement	0.005ml/g	0.05ml PO BID	Until improvement is observed.	No adverse affects
RABIES VACCINE	Dose/g bw	DOSAGE	DURATION	WARNING
Three year vaccine.	<u>Adults:</u> 0.01ml/g	0.05ml SQ for pups weighing up to 3.9 g. 0.1ml SQ for pups and adult bats weighing 4g and over.	One dose	Bats that are already incubating rabies infection may present with clinical signs of infection within two weeks of being vaccinated, and should be humanely euthanized.