PROPERTIES OF ANAESTHETICS USED IN LARGE ANIMAL SURGERY

TRADE NAME	ACTIVE INGREDIENT	MECHANISM OF ACTION	DOSAGE mg/kg	INDICATIONS	ROUTE OF ADMINISTRATION	TOXIC EFFECTS	WITHDRAWAL TIME
Cefazolin for injection USP	Cefazolin	Cefazolin inhibits cell wall biosynthesis by binding Penicillin binding proteins which stops peptidoglycan synthesis. Penicillin binding proteins are bacterial proteins that help to catalyze the last stages of peptidoglycan synthesis, which is needed to maintain the cell wall. They remove the D-alanine from the precursor of the peptidoglycan. The lack of synthesis causes the bacteria to lyse because they also continually break down their cell walls.	Dogs and Cats: 10-30 mg/kg via IV every 6-8 hours. For protection against bacterial infection prior to a surgery: 20 mg/kg IV before, and every 2 hours during the procedure.	Surgical prophylaxis	IM, IV	Vomiting, diarrhea	Cattle- Meat: 42 days
Marbocyl 10%	Marbofloxacin	Marbofloxacin's primary mechanism of action is to inhibit the bacterial enzymes, which eventually leads to the death of the bacteria.	The recommended dose rate is 2mg/kg/day (1ml/50kg) in a single daily injection by intramuscular, subcutaneous or intravenous routes in cattle and by intramuscular route in pigs.	In cattle: Indicated in the treatment of respiratory infections caused by susceptible strains of organisms. It is also indicated in the treatment of acute *E.coli* mastitis. In pigs: Indicated in the treatment of Metritis Mastitis Agalactia syndrome caused by	IM, SC, IV	None specified	Cattle- Milk: 36 hours, Meat: 6 days Pig- Meat: 4 days

			Treatment durations are 3 days in pigs and 3 to 5 days in cattle.	susceptible strains of organisms.			
Lidocaine injection BP 2%	Lidocaine	Lidocaine stabilizes the neuronal membrane by inhibiting the ionic fluxes required for the initiation and conduction of impulses thereby effecting local anesthetic action. Lidocaine alters signal conduction in neurons by blocking the fast voltage gated sodium (Na+) channels in the neuronal cell membrane that are responsible for signal propagation. With sufficient blockage the membrane of the postsynaptic neuron will not depolarize and will thus fail to transmit an action potential. This creates the anaesthetic effect by not merely preventing pain signals from propagating to the brain but by aborting their birth in the first place.	**HORSES:** **Infiltration Anesthesia** - 2 to 50 mL. Subcutaneously or intramuscularly. For suturing wounds, minor surgery and therapeutic cautery. **Regional Nerve Blocks:** **Infra Orbital Nerve Block** - 8 to 12 mL. For surgery of the upper lips and nostrils, trephining of the maxillary sinuses and extracting upper incisor and cheek teeth. **Mandibular Nerve Block** - 10 to 20 mL. For surgery of the lower lip, mandible and lower molar and incisor teeth.	Lidocaine is an anesthetic agent indicated for production of local or regional anesthesia and in the treatment of ventricular tachycardia occurring during cardiac manipulation, such as surgery or catheterization, or which may occur during acute myocardial infarction, digitalis toxicity, or other cardiac diseases.	IM, SC	Do not administer intravenously. Convulsions and shock may occur in sensitive animals if large doses of the drug are given intravenously (inadvertently) or intrathecally.	

			Median and Ulnar Nerve Block - 15 to 20 mL. For surgery distal to the carpus and for diagnosis of lameness. **Volar and Plantar Nerve Blocks** - 5 to 10 mL. For surgery of the extremities of the feet and the diagnosis of lameness. **Posterior Digital Nerve Block** - 3 to 5 mL. For diagnosis of navicular disease. **Epidural Block** (Standing Animal) - 4 to 10 mL. For surgery of the tail, anus and rectum, vulva and vagina and perineum. **CATTLE: Infiltration Anesthesia** - 5 to 100 mL. Subcutaneously or intramuscularly. For major surgery				

			and suturing wounds. **Regional Nerve Blocks:** **Cornual Nerve Block** - 10 to 15 mL. For dehorning of bulls. **Epidural Block** (Standing Animal) - 4 to 8 mL. For surgery of the tail, anus, rectum, vulva and vagina and perineum; relaxation of the penis; counteracting excessive straining during replacement of the prolapsed uterus or vagina; removal of urethral calculi in feedlot steers. **Paravertebral Block** - 50 to 80 mL. For Laparotomy. **CALVES AND SHEEP:** Epidural Block - 3 to 10 mL. **SOWS:**				

			Infiltration Anesthesia - 60 to 80 mL. For Laparotomy. ** Volumes based on 20 mg/ml concentration				
Dopram injection	Doxapram hydrochloride	Doxapram stimulates chemoreceptors in the carotid bodies of the carotid arteries, which in turn, stimulates the respiratory centre in the brain stem.	0.5 – 1 mg/kg for a single injection and at 5-minute intervals. he solution is prepared by adding 250 mg of doxapram (12.5 mL) to 250 mL of dextrose 5% or 10% in water or normal saline soluti on. The infusion is initiated at a rate of approximately 5 mg/minute until a satisfactory respiratory response is observed, and maintained at a rate of 1 to 3 mg/minute.	Post anesthesia: airway blockage, Drug induced CNS depression to prevent vomiting and aspiration,	IV injection or infusion	Increased blood pressure and heart rate, vomiting and tremors	
Buscopan compositum	Butylscopolamine, Metamizole	The mechanism of action of Buscopan is that it blocks the muscarinic receptors found on the smooth muscle walls. Which means its blocks the	Horses: 5 ml per 100 kg bodyweight. Adult Cattle: 5 ml per 100 kg bodyweight	As an aid in the control of pain associated with simple equine colic and as a diagnostic aid in more severe equine colics.	IV, IM	Due to a risk of local reactions, do not use the intramuscular route in horses.	Cattle - meat:9 days iv, 28 days im Horse meat and offal: 12 days. Not permitted for use in

		action of acetylcholine on the receptors found within the smooth muscle of the gastrointestinal and urinary tract and thus reduces the spasms and contractions. This relaxes the muscle and thus reduced the pain from the cramps and spasms.		For the control of diarrhoea in cattle, horses and dogs particularly when pain or abdominal discomfort is present. For the control of pain associated with urinary obstruction in horses and dogs.		Do not use in pregnant animals as safety during pregnancy in the target species has not been established. Do not use in case of hypersensitivity to the active substance or to any of the excipients. Do not use in horses suffering from paralytic ileus.	cows producing milk for human consumption.