

Gesiton

INJECTION

For Veterinary Use Only

COMPOSITION:

Each ml contains	
Etilefrin	0.2mg
Caffeine	10mg
Sodium Salicylate	7mg
Novaminsulfon	40mg
Nicotinamide	0.3mg
Calcium gluconate	100mg
Magnesium gluconate	10mg
Boric Acid	10mg
Sorbitol	200mg
Sodium Oxybenzylphosphinic Acid	5mg
Methyl Parahydroxy Benzoate	0.7mg

CHARACTERISTICS:

Gesiton injection is the combination of life supporting ingredients with energetic, analgesic, antipyretic and cardiac anabolic, synergistic and nephroprotective effects. It is used as a post-infection tonic.

INDICATIONS:

As a therapy in weakness and exhaustion, as a supplement to antibiotics in acute and serve infections like coli mastitis, septicemia, enteritis, pneumonia, in transportation disease, ketosis, acetonaemia, as a febrifuge and anodyne and for stimulating appetite and movement in animals.

Poultry:

Gesiton injection is effective for an instant relief from anemia, acute mortality due to physio-pathological or management disorders, as a supplement therapy in CRD, Mycoplasmosis, Newcastle disease, Gumboro disease, Infectious Bronchitis, Marek's disease, Lymphoid Leucosis, Colibacillois, Hydro pericardium syndrome and stress conditions in poultry.

PHARMACODYNAMICS

Etilefrin is a cardiac stimulant which significantly increases mean arterial, systolic and pulse pressure by stimulating both α and β adrenergic receptors. Caffeine is the most widely consumed central-nervous-system stimulant. Three main mechanisms of action of caffeine on the central nervous system have been described. Mobilization of intracellular calcium and inhibition of specific phosphodiesterase's only occur at high non-physiological concentrations of caffeine. The only likely mechanism of action of the methylxanthine is the antagonism at the level of adenosine receptors. Sodium salicylate inhibits the activity of cyclooxygenase and PGF₂ α to exert anti-inflammatory effects. Sodium salicylate also inhibits the synthesis of

thromboxane, as a result platelet aggregation is inhibited and bleeding time prolongs.

Novaminsulfon is a strong NSAID which has good antipyretic and analgesic properties. Novaminsulfon acts on central nervous system and inhibit pain mediation by inhibiting the release of prostaglandins.

Calcium is essential for the functional integrity of nervous, muscular and skeletal systems. It plays a role in normal cardiac function, renal function, respiration, blood coagulation, and cell membrane and capillary permeability.

Magnesium is necessary for the proper functioning of over 300 enzymes, including several in glycolysis and the Krebs cycle, adenyl cyclase, which forms cyclic-AMP, and various phosphatase reactions in protein and nucleic acid synthesis. Magnesium is also necessary for neuromuscular transmission and activity, bone mineralization, and parathyroid hormone function.

Nicotinamide is a water-soluble component of the vitamin B complex group. In vivo, Nicotinamide is incorporated into nicotinamide adenine dinucleotide (NAD) and nicotinamide adenine dinucleotide phosphate (NADP). NAD and NADP function as coenzymes in a wide variety of enzymatic oxidation-reduction reactions essential for tissue respiration, lipid metabolism, and glycogenolysis.

Boric acid works as an antiseptic and helps in better absorption of calcium. The exact mechanism of action of boric acid is unknown; generally cytotoxic to all cells. It is used in the treatment of different infections e.g. fungal infections.

PHARMACOKINETICS

Etilefrin has good absorption rate either intravenous or oral route and peak plasma concentration of 10-25 ng per ml are observed after 30 minutes of intake with a predominant half-life of 2 hours.

Novaminsulfon has rapid absorption rate and maximum plasma concentrations are reached in short time.

Calcium gluconate absorption is increased with acidic condition; therefore, administer 1-2 hours after meals.

Protein bound: ~45% (primarily to albumin)

Excretion: Feces as unabsorbed calcium salt (80%),

urine (20%)

Magnesium gluconate Absorption: 40-60% under controlled dietary conditions; 15-36% at higher doses; inversely proportional to amount ingested

Distribution: 50-60% bone; 1-2% extracellular fluid

Protein Bound: 30%

Excretion: Urine

Sodium salicylate elimination was best described by a one-compartment elimination model after administration of 40mg/kg by intravenous route. The decrease in plasma concentrations following treatment administration was characterized by a half-life (T_{1/2}) elimination of 1.23 \pm 0.31 h. The volume of distribution (V_{ds}) of salicylic acid was 0.24 \pm 0.04 l/kg. Salicylic acid clearance (Cl_{tot}) was 0.16 \pm 0.04 l/h/kg. This value was associated to a mean residence time of 1.34 \pm 0.24 h.

Nicotinamide also known as niacinamide or nicotinic amide, is readily absorbed from all portions of intestinal tract and from parenteral sites of administration. Nicotinamide is distributed in all tissues. Niacinamide is widely distributed into body tissues.

Niacin and niacinamide are readily absorbed from the GI tract following oral administration, and niacinamide is readily absorbed from subcutaneous and IM injection sites. Niacinamide is actively transported to the fetus. Higher concentrations are found in the fetus and newborn, rather than in the mother.

Niacinamide is metabolized in the liver to N-methylniacinamide, other N-methylated derivatives, and nicotinic acid (the glycine conjugate of niacin). These metabolites are excreted in urine. Following administration of physiologic doses of niacin or niacinamide, only a small amount of niacinamide is excreted unchanged in urine; however, following administration of larger doses, a greater proportion of niacin and niacinamide is excreted unchanged in urine. Caffeine is slowly absorbed by small intestines and maximum plasma concentration is achieved by 1-2 hours with a biological half-life of 3-7 hours. Caffeine is metabolized in the liver by the cytochrome P450 oxidase enzyme system, in particular, by the CYP1A2 isozyme, into three dimethylxanthines, each of which has its own effects on the body:

- Paraxanthine (84%): Increases lipolysis, leading to elevated glycerol and free fatty acid levels in blood plasma.
- Theobromine (12%): Dilates blood vessels and increases urine volume. Theobromine is also the principal alkaloid in the cocoa bean (chocolate).
- Theophylline (4%): Relaxes smooth muscles of the bronchi, and is used to treat asthma.

Each of these metabolites is further metabolized and then excreted in the urine.

Boric Acid is a weakly acidic hydrate of boric oxide with mild antiseptic, antifungal, and antiviral properties.

Boric acid is predominantly eliminated unchanged by the kidney. Small amounts are also excreted into

sweat, saliva, and feces. Boric acid is concentrated in the brain and liver. In animals, boric acid has been shown to be readily absorbed from the GI tract. Among the species studied were rats, rabbits, sheep, and cattle.

DOSAGE AND ADMINISTRATION:

Administer the following dose by slow intravenous injection, while in exceptional cases can be administered by subcutaneous or intramuscular injection.

Horses: 50-200ml

Cattle / Buffalo: 150-250ml

Sheep / Goat: 20-30ml

Calves: 30-70ml

Poultry: 0.2ml per kg body weight by intramuscular or subcutaneous injection.

0.4ml per kg body weight by drinking water.

CONTRAINDICATIONS:

Do not use in animals sensitive to active ingredients of the product.

Do not use in animals with severe live & kidney damage, heart failure and arrhythmias.

PRECAUTION:

Continuously monitor the body temperature and heartbeat of the animals during intravenous infusions, discontinue the infusion in case of tachycardia, cardiac arrhythmia and hypothermia.

Do not administer by intramuscular or subcutaneous route in horses.

Consult the veterinarian before use.

Keep out of the reach of children.

Store between 15-25°C in a cool and dry place.

Withdrawal: Meat: 6 days.

Innovator's Specs



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