VETERINARY MEDICINE

SCHEDULING STATUS
S4

PROPRIETARY NAME (AND DOSAGE FORM)
DRAXXIN 100 mg/ml Injection

COMPOSITION
Each ml contains 100 mg of tulathromycin

PHARMACOLOGICAL CLASSIFICATION
C 17.1.4 Antimicrobials – Macrolides and Lincosamides

PHARMACOLOGICAL ACTION
Pharmacodynamics
Tulathromycin is a semi-synthetic macrolide antimicrobial agent, which originates from a fermentation product. It differs from many other macrolides in that it has a long duration of action that is, in part, due to its three amine groups; therefore it has been given the chemical subclass designation of triamilide.

Macrolides inhibit essential protein biosynthesis by virtue of their selective binding to bacterial ribosomal RNA. They act by stimulating the dissociation of peptidyl-tRNA from the ribosome during the translocation process.

Tulathromycin possesses *in vitro* activity against *Mannheimia haemolytica, Pasteurella multocida, Histophilus somni* and *Mycoplasma bovis* in cattle, and *Actinobacillus pleuropneumoniae, Pasteurella multocida* and *Mycoplasma hyopneumoniae* in swine, the bacterial pathogens most commonly associated with bovine and swine respiratory disease

Tulathromycin also possesses *in vitro* activity against *Moraxella bovis* and *Neisseria* spp., the bacterial pathogens most commonly associated with infectious bovine keratoconjunctivitis (IBK).

Pharmacokinetics
In cattle, the pharmacokinetic profile of tulathromycin, when administered as a single subcutaneous dose of 2,5 mg/kg body weight, was characterised by rapid and extensive absorption followed by high distribution into lung tissue. Tulathromycin exposure in lung was approximately 73 times greater than that in plasma based on areas under concentration-time curves (AUC). A lung concentration of 3,2 µg/g was achieved 12 hours after administration and a maximum concentration (lung C_{max}) of 4,1 µg/g was attained at 24 hours. Ten days after administration, the mean tulathromycin concentration was 1,9 µg/g demonstrating that lung tissue concentrations were sustained for a long duration. Lung concentrations remained above the tulathromycin MIC_{90} values for *Mannheimia haemolytica* (2,0 µg/ml) and *Pasteurella multocida* (1,0 µg/ml) for approximately 9 and 15 days respectively. The elimination half-life in lung was approximately 8 days. The bioavailability of **Draxxin** after subcutaneous administration in cattle was approximately 90 %.

In swine, the pharmacokinetic profile of tulathromycin, when administered as a single intramuscular dose of 2,5 mg/kg body weight, was also characterised by rapid and extensive absorption followed by high distribution into lung tissue. Tulathromycin concentration in lung was approximately 61 times greater than that in plasma based on areas under concentration-time curves (AUC). A lung concentration of 2,8 µg/g was achieved 12 hours after administration and a maximum concentration (lung C_{max}) of 3,5 µg/g was attained at 24 hours. Six days after administration, the mean tulathromycin concentration was 1,7 µg/g demonstrating that lung tissue concentrations were sustained for a long duration. Lung concentrations remained above the tulathromycin MIC_{90} values for *Pasteurella multocida* (2,0 µg/ml) and *Mycoplasma hyopneumoniae* (0,05 µg/ml) for approximately 5 and 15 days respectively. The elimination half-life in lung was approximately 6 days.

INDICATIONS PER SPECIES

Cattle

- Treatment and prevention of bovine respiratory disease associated with *Mannheimia haemolytica, Pasteurella multocida, Histophilus somni* and *Mycoplasma bovis.*
  Presence of disease in the herd should be established before prevention treatment can be employed.
- Treatment of infectious bovine keratoconjunctivitis (IBK) associated with *Moraxella bovis* and *Neisseria* spp.

Swine

- Treatment of swine respiratory disease associated with *Actinobacillus pleuropneumoniae, Pasteurella multocida,* and *Mycoplasma hyopneumoniae,* sensitive to tulathromycin.

CONTRA-INDICATIONS

- Do not use in the case of hypersensitivity of the target animal to macrolide antibiotics.
- Do not use the product simultaneously with other macrolides or lincosamides.
- Do not use in lactating cattle producing milk for human consumption.
- Do not use in pregnant cows or heifers, which are intended to produce milk for human consumption, within 2 months of expected parturition.

WARNINGS, WITHDRAWAL PERIOD IN FOOD-PRODUCING ANIMALS, SAFETY IN PREGNANCY AND LACTATION

Warnings

In the absence of incompatibility studies, **Draxxin** should not be mixed with other veterinary medicinal products.

Withdrawal period

Cattle; meat and offal: 40 days
Swine; meat and offal: 30 days
Not permitted for use in lactating cattle producing milk for human consumption.

Pregnancy and lactation

The safety of **Draxxin** in cattle and swine during pregnancy and lactation has not been established.

DOSAGE AND DIRECTIONS FOR USE

Cattle

Administer a single subcutaneous injection of 2,5 mg tulathromycin/kg body weight (equivalent to 1ml per 40 kg body weight). For treatment of cattle over 400 kg body weight, divide the dose so that no more than 10 ml is injected at one site.

Swine

Administer a single intramuscular injection of 2,5 mg tulathromycin/kg body weight (equivalent to 1 ml per 40 kg body weight) in the neck. For treatment of swine over 80 kg body weight, divide the dose so that no more than 2 ml is injected at one site.

SIDE EFECTS AND SPECIAL PRECAUTIONS

Side effects

Subcutaneous administration of **Draxxin** to cattle may cause a transient local swelling at the injection site. Minor reactions have been observed in swine after intramuscular administration.

Special precautions

Use of the product should be based on susceptibility testing. Do not administer simultaneously with antimicrobials with a similar mode of action such as macrolides or lincosamides.

Special precautions to be taken by the person administering the product to animals

Draxxin is irritating to eyes. If accidental eye exposure occurs, flush eyes immediately with clean water.

Draxxin may cause sensitisation by skin contact. If accidental skin exposure occurs, wash the skin immediately with soap and water.
Wash hands after use.
In case of accidental self-injection, seek medical advice immediately.

INTERACTIONS
No interactions have been observed in the clinical studies.

KNOWN SIGNS OF OVERDOSAGE AND PARTICULARS OF ITS TREATMENT PER SPECIES
In cattle, at dosages of three, five or ten times the recommended dose, transient signs attributed to injection site discomfort were observed and included restlessness, head-shaking, pawing the ground, and a brief decrease in feed intake.

In young swine weighing approximately 10kg given three or five times the therapeutic dose, transient signs attributed to injection site discomfort were observed and included excessive vocalisation and restlessness. Lameness was also observed when a hind leg is used as the injection site.

IDENTIFICATION
Clear, colourless, slightly yellow solution essentially free from foreign matter.

PRESENTATION
Carton containing a 50 ml or 100 ml glass vial.

STORAGE INSTRUCTIONS
Store below 25 ^{o}C.
KEEP OUT OF REACH OF CHILDREN AND UNINFORMED PERSONS.
The broached vials may be kept 28 days from withdrawal of first dose.

REGISTRATION NUMBER
05/21.1/2

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