1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Florinject 300 mg/ml solution for injection for cattle and pigs

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each ml contains

Active substance:

Florfenicol ..... 300 mg

Excipients:

Qualitative composition of excipients and other constituents	**Quantitative composition if that information is essential for proper administration of the veterinary medicinal product**
N-methyl pyrrolidone	250 mg
Propylene glycol	
Macrogol 300	

Clear slightly yellowish solution.

3. CLINICAL INFORMATION

3.1 Target species

Cattle and pigs.

3.2 Indications for use for each target species

Cattle:

Treatment and metaphylaxis of respiratory tract infections in cattle due to *Mannheimia haemolytica, Pasteurella multocida* and *Histophilus somni*, susceptible to florfenicol.
The presence of the disease in the herd should be established before metaphylaxis.

Pigs:
Treatment of acute outbreaks of respiratory disease caused by strains of *Actinobacillus pleuropneumoniae* and *Pasteurella multocida* susceptible to florfenicol.

3.3 Contraindications

Do not use in adult bulls and boars intended for breeding purposes.
Do not use in cases of hypersensitivity to the active substance or to any of the excipients.

3.4 Special warnings

None.

3.5 Special precautions for use

Special precautions for safe use in the target species:
Do not administer to piglets of less than 2 kg.
Use of the veterinary medicinal product should be based on susceptibility testing of the bacteria isolated from the animal. If this is not possible, therapy should be based on local (regional, farm level) epidemiological information about susceptibility of the target bacteria.
Official national and regional antimicrobial policies should be taken into account when the veterinary medicinal product is used.
Use of the veterinary medicinal product deviating from the instructions given in the SPC may increase the prevalence of bacteria resistant to florfenicol and may decrease the effectiveness of treatment with other antimicrobials due to the potential for cross-resistance. An antibiotic with a lower risk of antimicrobial resistance selection (lower AMEG category) should be used for first line treatment where susceptibility testing suggests the likely efficacy of this approach.

Special precautions to be taken by the person administering the veterinary medicinal product to animals:

This veterinary medicinal product may cause hypersensitivity (allergy).

People with known hypersensitivity to florfenicol or propylene glycol should avoid contact with the veterinary medicinal product.

Laboratory studies in rabbits and rats with the excipient N-methyl pyrrolidone have shown evidence of foetotoxic effects. Women of childbearing age, pregnant women or women suspected of being pregnant should use the veterinary medicinal product with serious caution to avoid accidental self-injection.

Care should be taken to avoid accidental self-injection. In case of accidental self-injection, seek medical advice immediately and show the package leaflet or the label to the physician.

Avoid skin or eye contact with the veterinary medicinal product. In case of contact with the skin or eyes, rinse the affected area immediately with plenty of water. Wash hands after use.

Special precautions for the protection of the environment:

The use of this veterinary medicinal product may pose a risk for terrestrial plants, cyanobacteria and groundwater organisms.

3.6 Adverse events

Cattle:

Very rare (<1 animal / 10,000 animals treated, including isolated reports):	Anaphylactic-type reaction
Undetermined frequency:	Reduced food intake[1] Pasty stool[1,3] Injection site inflammation[2]

[1] may occur during the treatment period. The treated animals recover quickly and completely upon termination of treatment.

[2] persists for 14 days.

[3] transient.

Pigs:

Very common (>1 animal / 10 animals treated):	Diarrhoea[4] Erythema/oedema[5,6] Pyrexia[7] Depression[7] Dyspnoea[7]
Undetermined frequency:	Injection site swelling[4,8] Injection site inflammation[9]

[4] transient.

[5] peri-anal and rectal.

[6] can be observed for one week.

[7] pyrexia is associated with either moderate depression or moderate dyspnoea. Observed a week or more after administration of the second dose.

[8] lasting up to 5 days.

[9] may be seen up to 28 days.

Reporting adverse events is important. It allows continuous safety monitoring of a veterinary medicinal product. Reports should be sent, preferably via a veterinarian, to either the marketing authorisation holder or its local representative or the national competent authority via the national reporting system. See the package leaflet for respective contact details.

3.7 Use during pregnancy, lactation or lay

Pregnancy and lactation:

The safety of the veterinary medicinal product has not been established in cattle and pigs during pregnancy, lactation, or in animals intended for breeding. Studies in laboratory animals have not revealed any evidence of embryo- or foetotoxic potential for florfenicol. Laboratory studies in rabbits and rats with the excipient N-methyl pyrrolidone have shown evidence of foetotoxic effects. Use only according to the benefit-risk assessment by the responsible veterinarian.

Fertility:

Do not use in adult bulls and boars intended for breeding (see section 3.3).

3.8 Interaction with other medicinal products and other forms of interaction

None known.

3.9 Administration routes and dosage

Cattle: Intramuscular or subcutaneous injection.
Pigs: Intramuscular injection.

Cattle:

Treatment

IM route: 20 mg florfenicol /kg bodyweight (1ml of the product/15kg) to be administered twice 48 hours apart using a 16 gauge needle.

SC route: 40 mg florfenicol /kg bodyweight (2ml of the product /15kg) to be administered once only using a 16 gauge needle.

Metaphylaxis

SC route: 40 mg florfenicol /kg bodyweight (2ml of the product /15kg) to be administered once only using a 16 gauge needle.

Pigs:

15 mg florfenicol /kg bodyweight (1 ml of the product/ 20 kg) by intramuscular injection twice at 48 hour intervals using a 16 gauge needle.

The dose volume given at any one injection site should not exceed 10 ml for both routes of administration (intramuscular and subcutaneous) in cattle and 3 ml in pigs. The injection should only be given in the neck in both target species.
To ensure a correct dosage body weight should be determined as accurately as possible to avoid underdosing.
It is recommended to treat animals in the early stages of disease and to evaluate the response to treatment within 48 hours after the second injection. If clinical signs of respiratory disease persist 48 hours after the last injection or if relapse occurs, treatment

should be changed using another formulation or another antibiotic and continued until clinical signs have resolved.
Swab septum before removing each dose. Use a dry sterile needle and syringe.
Do not broach the vial more than 25 times.

3.10 Symptoms of overdose (and where applicable emergency procedures and antidotes)

Cattle:
No symptoms other than those noted in section 3.6.

Pigs:
After administration of 3 times the recommended dose or more a reduction in feeding, hydration and weight gain has been observed.
After administration of 5 times the recommended dose or more, vomiting has also been noted.

3.11 Special restrictions for use and special conditions for use, including restrictions on the use of antimicrobial and antiparasitic veterinary medicinal products in order to limit the risk of development of resistance

Not applicable.

3. 12 Withdrawal periods

Cattle:

Meat and offal:	by IM (at 20 mg/kg bodyweight, twice): 30 days.
	by SC (at 40 mg/kg bodyweight, once): 44 days.

Milk: Not authorised for use in animals producing milk for human consumption, including during the dry period.

Pigs:

Meat and offal:	18 days.

4. PHARMACOLOGICAL INFORMATION

4.1 ATCVet code:

QJ01BA90

4.2 Pharmacodynamics

Florfenicol is a synthetic broad spectrum antibiotic effective against most Gram-positive and Gram-negative bacteria isolated from domestic animals. Florfenicol acts by inhibiting protein synthesis at the ribosomal level and is bacteriostatic. Laboratory tests have shown that florfenicol is active against the most commonly isolated bacterial pathogens involved in bovine respiratory disease which include *Mannheimia haemolytica, Pasteurella multocida, Histophilus somni* and in swine respiratory disease including *Actinobacillus pleuropneumoniae* and *Pasteurella multocida*.

Florfenicol is considered to be a bacteriostatic agent, but *in vitro* studies of florfenicol demonstrate bactericidal activity against *Mannheimia haemolytica, Pasteurella multocida*, *Histophilus somni* and A*ctinobacillus pleuropneumoniae*.

In contrast to chloramphenicol, florfenicol does not carry the risk of inducing non-dose-related aplastic anaemia in man.

Organisms resistant to chloramphenicol and thiamphenicol through the common transacetylation resistance mechanisms are less susceptible to resistance of florfenicol. However, cross-resistance to chloramphenicol and florfenicol mediated by a gene (floR) that codes for an efflux protein and is carried on plasmids has been observed in isolated cases of bovine and porcine *Pasteurellae*. Resistance to florfenicol and other antimicrobials has been identified in the food-borne pathogen Salmonella typhimurium and co-resistance to florfenicol and other antimicrobials (e.g. ceftiofur) has been identified in the microrganisms from the family *Enterobacteriaceae*.

4.3 Pharmacokinetics

In cattle, intramuscular administration at the recommended dose of 20mg/kg maintains efficacious blood levels in cattle for 48 hours. Maximum mean serum concentration (C_{max}) of 3.37µg/ml occurs at 3.3 hours (T_{max}) after dosing.
The mean serum concentration 24 hours after dosing was 0.77µg/ml.
The administration of the product by subcutaneous route at the recommended dosage of 40mg/kg maintains efficacious blood levels in cattle (ie above the MIC_{90} of the main respiratory pathogens) for 63 hours. Maximum serum concentration (C_{max}) of approximately 5 µg/ml occurs approximately 5.3 hours (T_{max}) after dosing. The mean serum concentration 24 hours after dosing is approximately 2 µg/ml.
The elimination half life was 18.3 hours.
In pigs intravenously administered florfenicol had a mean plasma clearance rate of 5.2 ml/min/kg and a mean volume of distribution at equilibrium of 948 ml/kg. The mean terminal half-life is 2.2 hours.
After initial intramuscular administration of florfenicol, maximum plasma concentrations of between 3.8 and 13.6 µg/ml are reached after 1.4 hours and the concentrations deplete with a terminal mean half-life of 3.6 hours. After a second intramuscular administration, maximum plasma concentrations of between 3.7 and 3.8 µg/ml are reached after 1.8 hours. Plasma concentrations drop below 1 µg/mL, the MIC_{90} for the target porcine pathogens, 12 to 24 hours following IM administration. Florfenicol concentrations achieved in lung tissue reflect plasma concentrations, with a lung:plasma concentration ratio of approximately 1.
After administration to pigs by the intramuscular route, florfenicol is rapidly excreted, primarily in urine. The florfenicol is extensively metabolised.

5. PHARMACEUTICAL PARTICULARS

5.1 Major incompatibilities

In the absence of compatibility studies, this veterinary medicinal product must not be mixed with other veterinary medicinal products.

5.2 Shelf life

Shelf life of the veterinary product as packaged for sale: 2 years.

Shelf life after first opening the immediate packaging: 28 days.

5.3 Special precautions for storage

Keep the vial in the outer carton in order to protect from light.

5.4 Nature and composition of immediate packaging

One polypropylene vial of 250 ml, closed with pink bromobutyl stopper secured with flip-off aluminium collar, in a cardboard box.

5.5 Special precautions for the disposal of unused veterinary medicinal product or waste materials derived from the use of such products

Medicines should not be disposed of via wastewater or household waste.
The veterinary medicinal product should not enter water courses as florfenicol may be dangerous for fish and other aquatic organisms.
Use take-back schemes for the disposal of any unused veterinary medicinal product or waste materials derived thereof in accordance with local requirements and with any national collection systems applicable to the veterinary medicinal product concerned.

6. NAME OF THE MARKETING AUTHORISATION HOLDER

LABORATORIOS CALIER, S.A.

7. MARKETING AUTHORISATION NUMBER(S)

VPA10665/006/001

8. DATE OF THE FIRST AUTHORISATION

27/09/2013

9. DATE OF THE LAST REVISION OF THE SUMMARY OF THE PRODUCT CHARACTERISTICS

24/11/2023

10. CLASSIFICATION OF VETERINARY MEDICINAL PRODUCTS

Veterinary medicinal product subject to prescription.
Detailed information on this veterinary medicinal product is available in the Union Product Database (https://medicines.health.europa.eu/veterinary).