SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Parofor 140 mg/ml solution for use in drinking water/ milk for cattle (pre-ruminant) and pigs.

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each ml contains:

Active substance:

140 mg paromomycin base equivalent to 200 mg paromomycin sulfate or 140.000 IU of paromomycin activity

Excipients:

Qualitative composition of excipients and other constituents	Quantitative composition if that information is essential for proper administration of the veterinary medicinal products
Methyl parahydroxybenzoate (E218)	1.0 mg
Propyl parahydroxybenzoate	0.1 mg
Sodium metabisulphite (E223)	4.0 mg
Purified water	

A clear yellow to amber solution.

3. CLINICAL INFORMATION

3.1 Target species

Cattle (pre-ruminant), pigs.

3.2 Indications for use for each target species

Treatment of gastro-intestinal infections caused by *Escherichia coli*.

3.3 Contraindications

Do not use in cases of hypersensitivity to the active substance, to other aminoglycosides or to any of the excipients.
Do not use in cases with impaired function of the kidneys or liver.
Do not use in ruminating animals.
Do not use in turkeys due to the risk of selection for antimicrobial resistance in intestinal bacteria.

3.4 Special warnings

Cross-resistance has been shown between paromomycin and some antimicrobials in the aminoglycosides class in *Enterobacterales*. Use of the veterinary medicinal product should be carefully considered when susceptibility testing has shown resistance to aminoglycosides because its effectiveness may be reduced. Paromomycin selects for resistance and cross-resistances at high frequency against a variety of other aminoglycosides among intestinal bacteria.

3.5 Special precautions for use

Special precautions for safe use in the target species:

Use of the veterinary medicinal product should be based on identification and susceptibility testing of the target pathogen(s) isolated from the animal. If this is not possible, therapy should be based on epidemiological information and knowledge of susceptibility of the target pathogen at farm level or at local/regional level. Use of the veterinary medicinal product should be in accordance with official, national and regional antimicrobial policies.

The uptake of medication by animals can be altered as a consequence of illness. In case of insufficient uptake of water/milk animals should be treated parenterally using a suitable injectable veterinary medicinal product following the advice of the veterinarian.
The use of the veterinary medicinal product should be combined with good management practices e.g. good hygiene, proper ventilation, no overstocking.
Since the veterinary medicinal product is potentially ototoxic and nephrotoxic, it is recommended to assess kidney function.
Special care should be taken when considering administration of the veterinary medicinal product to newborn animals due to the known higher gastrointestinal absorption of paromomycin in neonates. This higher absorption could lead to an increased risk of oto- and nephrotoxicity. The use of the veterinary medicinal product in neonates should be based on a benefit/risk assessment by the responsible veterinarian.
Prolonged or repeated use of the veterinary medicinal product should be avoided by improving management practices and through cleansing and disinfection.
Use of the veterinary medicinal product deviating from the instructions given in the SPC may increase the prevalence of bacteria resistant to paromomycin and may decrease the effectiveness of treatment with aminoglycosides due to the potential for crossresistance.
Aminoglycosides are considered as critical in human medicine. Consequently, they should not be used as a first line treatment in veterinary medicine.

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

This veterinary medicinal product contains paromomycin, which can cause allergic reactions in some people.
People with known hypersensitivity to paromomycin should avoid contact with the veterinary medicinal product.
Avoid contact with the skin and eyes.

Personal protective equipment consisting of protective clothing and impervious gloves should be worn when handling the veterinary medicinal product.
In case of accidental contact with the skin or eyes, rinse with plenty of water.
If you develop symptoms following exposure, such as skin rash, you should seek medical advice and show the package leaflet or the label to the physician. Swelling of the face, lips and eyes or difficulty in breathing are more serious symptoms and require urgent medical attention.
Do not eat, drink and smoke when handling the veterinary medicinal product.
Do not ingest. In case of accidental ingestion or spillage onto skin, seek medical advice immediately and show the package leaflet or the label to the physician.
Wash hands after use.

Special precautions for the protection of the environment:

Not applicable.

3.6 Adverse events

Cattle (pre-ruminant), pigs:

Rare (1 to 10 animals / 10,000 animals treated):	Loose stool
Undetermined frequency (cannot be estimated from available data)	Nephropathy[1] Internal ear disorder[1]

[1] Aminoglycoside antibiotics such as paromomycin can cause nephro- and ototoxicity.
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 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:
Laboratory studies in rat and rabbit have not produced any evidence of teratogenic, foetoxic or maternotoxic effects. The use is not recommended during the pregnancy.

3.8 Interaction with other medicinal products and other forms of interaction

General anaesthetics and muscle relaxing products increase the neuro-blocking effect of aminoglycosides. This may cause paralysis and apnoea.
Do not use concurrently with strong diuretics and potentially oto- or nephrotoxic substances.

3.9 Administration routes and dosage

In drinking water/ milk use
Cattle (pre-ruminant):
For administration in milk/milk replacer.

25-50 mg paromomycin sulfate per kg BW/day (equivalent to 0.125 – 0.25 ml of veterinary medicinal product/kg BW/day).
Duration of treatment: 3-5 days.

Pigs:
For administration in drinking water.
25-40 mg paromomycin sulfate per kg BW/day (equivalent to 0.125 – 0.2 ml of veterinary medicinal product/kg BW/day).
Duration of treatment: 3-5 days.

To ensure a correct dosage, body weight should be determined as accurately as possible.
The use of suitably calibrated measuring equipment is recommended.

Based on the recommended dose and the number and weight of animals to be treated, the exact daily concentration of the veterinary medicinal product should be calculated according to the following formula:

$$\frac{\text{ml veterinary medicinal product/ kg body weight / day} \times \text{mean body weight (kg) of animals to be treated}}{\text{Mean daily water/milk/milk replacer consumption (l/animal)}} = \text{… ml veterinary medicinal product per litre drinking water/milk/milk replacer}$$

The intake of medicated water/milk /milk replacer depends on several factors including the clinical conditions of the animals and the local conditions such as ambient temperature and humidity. In order to obtain the correct dosage, drinking water/milk/milk replacer uptake has to be monitored and the concentration of paromomycin may need to be adjusted accordingly.
Medicated drinking water/milk/milk replacer and any stock solutions should be freshly prepared by carefully mixing the veterinary medicinal product in the requisite quantity of fresh potable water /milk/milk replacer every 6 hours (in milk/milk replacer) or every 24 hours (in water).

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

Paromomycin when administered orally is hardly absorbed systemically. Harmful effects due to accidental overdosing are highly unlikely.

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 (pre-ruminant)
Meat and offal: 20 days
Pigs
Meat and offal: 3 days

4. PHARMACOLOGICAL INFORMATION

4.1 ATCvet code:

QA07AA06

4.2 Pharmacodynamics

Paromomycin belongs to the group of aminoglycoside antibiotics. Paromomycin changes the reading of messenger-RNA, which disrupts protein synthesis. The bactericidal activity of paromomycin is mainly attributed to its irreversible binding to ribosomes. Paromomycin has broad spectrum activity against numerous Gram-positive and Gram-negative bacteria, including *Escherichia coli*.
Paromomycin acts in a concentration-dependent manner. Five mechanisms of resistance have been identified: changes of the ribosome due to mutations, reduction of permeability of bacterial cell wall or active efflux, enzymatic modification of ribosomes and inactivation of aminoglycosides by enzymes. The first three resistance mechanisms arise from mutations of certain genes on bacterial chromosomes. The fourth and fifth resistance mechanism only occurs following uptake of genetic elements coding for resistance. Paromomycin selects for resistance and cross-resistance to other aminoglycosides at a high frequency in intestinal bacteria. Prevalence of resistance of *Escherichia coli* to paromomycin seemed relatively stable between 2015 to 2020 when extrapolating MIC data for neomycin in different European countries and was around 30-40% for calves pathogens.

4.3 Pharmacokinetics

Following oral administration of paromomycin, hardly any absorption takes place and the molecule is eliminated unchanged via the faeces.

Environmental properties

The active ingredient paromomycin sulfate is very persistent in the environment.

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 medicinal product as packaged for sale: 2 years.
Shelf life after first opening the immediate packaging: 3 months.
Shelf life after reconstitution in drinking water: 24 hours.
Shelf life after reconstitution in milk/milk replacer: 6 hours.

5.3 Special precautions for storage

Do not store above 25°C.
After reconstitution, this veterinary medicinal product does not require any special storage conditions.

5.4 Nature and composition of immediate packaging

White high density polyethylene bottle with tamper-evident screw polypropylene closure of 125 ml, 250 ml, 500 ml and 1 L.
Not all pack sizes may be marketed.

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.

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

Huvepharma NV

7. MARKETING AUTHORISATION NUMBER

Vm 30282/4033

8. DATE OF FIRST AUTHORISATION

25 July 2017

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

January 2025

10. CLASSIFICATION OF VETERINARY MEDICINAL PRODUCT

Veterinary medicinal product subject to prescription.

Find more product information by searching for the ‘Product Information Database’ on www.gov.uk.

Gavin Hall
Approved: 24 April 2025