[Version 9.1,11/2024]

ANNEX I

SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

NEMICINA 500.000 IU/g powder for use in drinking water/milk

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each g contains:

Active substances:
Neomycin sulfate……500.000 IU

Excipients:

Qualitative composition of excipients and other constituents
Silica, colloidal anhydrous
Lactose monohydrate

A slightly yellowish powder.

3. CLINICAL INFORMATION

3.1 Target species

Cattle (calves), sheep (lambs), pigs, chickens (broilers, layer hens) and turkeys.

3.2 Indications for use for each target species

Calves, lambs, pigs, broilers, layer hens and turkeys:
Treatment of intestinal infections caused by *E. Coli*.

3.3 Contraindications

-Do not use in cases of hypersensitivity to the active substance, to any other aminoglycoside or to any of the excipients.
-Do not use concurrently with potent diuretics and drugs potentially damaging to the kidneys.
-Do not use in animals with kidney and liver dysfunctions or hearing and balance disorders.
-Do not combine with other aminoglycosides or bacteriostatic antibiotics.
-Concomitant treatment with muscle relaxants without prior dose reduction is contraindicated.
-Do not use in pregnant animals.
-Do not use orally in ruminating animals.

3.4 Special warnings

Cross-resistance has been shown between neomycin and kanamycin and partial cross-resistance with gentamicin in target pathogens. Use of the veterinary medicinal product should be carefully considered when susceptibility testing has shown resistance to these aminoglycosides because its effectiveness may be reduced.
The level of resistance to neomycin depends on the frequency with which the medicinal product was used in the respective establishment. In farms where neomycin has already been repeatedly administered via the feed or drinking water, high resistance rates can be expected.

3.5 Special precautions for use

Special precautions for safe use in the target species:

Use of the product should be based on identification and susceptibility testing of the target pathogen(s). If this is not possible, therapy should be based on epidemiological information and knowledge of susceptibility of the target pathogens at farm level, or at local/regional level.

Use of the product should be in accordance with official, national and regional antimicrobial policies.

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.

Narrow spectrum antibiotic therapy with a lower risk of antimicrobial resistance selection 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:

Aminoglycosides may cause hypersensitivity (allergy) after inhalation, ingestion or skin contact. People with known hypersensitivity to neomycin or any excipients should avoid all contact with the veterinary medicinal product.

Handle the veterinary medicinal product with caution to avoid inhalation of dust and contact with skin, eyes and mucous membranes during incorporation into drinking water/milk or feed, as well as during administration of drinking water/milk or feed to animals.
Avoid spreading dust during incorporation of the veterinary medicinal product into drinking water/milk or feed.

Personal protective equipment consisting of a dust mask (disposable according to European standard EN 149 or non-disposable according to European standard EN 140 or with an EN 143 filter), gloves, work overalls and approved safety glasses should be worn when handling the veterinary medicinal product.

Wash hands after using the veterinary medicinal product.

Avoid contact with skin and eyes. In case of accidental exposure to skin, eyes or mucous membranes, wash the affected area with plenty of water. If symptoms such as skin rash, persistent eye irritation or respiratory symptoms appear after exposure, seek medical advice immediately and show the package leaflet or the label to the physician. Swelling of the face, lips and eyes or difficulty breathing are more serious symptoms that require urgent medical attention.

Do not smoke, eat or drink while handling the veterinary medicinal product.

Special precautions for the protection of the environment:

Not applicable.

3.6 Adverse events

Cattle (calves), sheep (lambs), pigs, chickens (broilers, layer hens) and turkeys:

Undetermined frequency (cannot be estimated from the available data):	Hearing and balance disorders. Renal disorder. Neuromuscular blockages[1], (e.g. convulsions[,2], abnormal breathing[2] and collapse[2]). Digestive tract malabsorption disorder[3]. Hypersensitivity reaction.

[1] Especially in animals with previously damaged intestinal mucosa and after a longer than the intended period of use.
[2] Collapse can be partially counteracted by administration of neostigmine and calcium.
[3] After repeated oral administration.

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:
Do not use during the whole pregnancy. Neomycin crosses the placenta and can have ototoxic and nephrotoxic effects in the fetus.

3.8 Interaction with other medicinal products and other forms of interaction

-Mixing with other medicines should be avoided because of possible incompatibilities. In the case of simultaneous treatment with other drugs, there is a risk of inactivation of neomycin.
-The combination with bacteriostatic chemotherapeutic agents should be avoided.
-Do not administer simultaneously with other ototoxic or nephrotoxic drugs.
-Interactions with anaesthetics and phenothiazine derivatives are possible. The neuromuscular blocking effect of neomycin is enhanced by muscle relaxants.

3.9 Administration routes and dosage

In drinking water/milk use.
In-feed use, for individual treatment only.

Calves, lambs, pigs:
6500 IU neomycin sulfate/kg body weight (bw)/day (equivalent to 13 mg of veterinary medicinal product/kg bw/day)

Broilers, layers, turkeys:
19500 IU neomycin sulfate/kg body weight (bw)/day (equivalent to 39 mg of veterinary medicinal product/kg bw/day)

The corresponding amount of powder should be completely dissolved in a small amount of water and added to the drinking water every day.

Before each application, the medicinal product must be freshly prepared and mixed with cooled milk replacer to complete dissolution.

Before each application, the powder must be freshly mixed into part of the feed so that complete mixing is achieved, and it must be used immediately. Care must be taken to ensure that the intended dose is achieved.

In order to ensure uniform water intake for all animals, sufficient drinking space must be provided. If kept outdoors, the animals should be kept indoors during treatment.

To ensure a correct dosage, body weight should be determined as accurately as possible.

The intake of medicated water depends on the clinical condition of the animals. In order to obtain the correct dosage, the concentration of neomycin may need to be adjusted accordingly.

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:

$$\frac{\text{mg veterinary medicinal product/ kg body weight day} \times \text{average body weight (kg) of animals to be treated}}{\text{average daily water intake (l/animal)}} = \text{mg of veterinary medicinal product per litre of drinking water}$$

In animals with a clearly disturbed general condition and/or in animals with a lack of appetite, preference should be given to a preparation to be administered parenterally.

The duration of the treatment is generally 3 days. After the clinical signs have subsided, medicine should be administered for at least 2 more days.

If there is no significant improvement in the condition of the disease after 3 days of treatment, the diagnosis should be checked and, if necessary, the therapy changed.

After the end of the treatment, the watering device must be cleaned in a suitable manner in order to avoid taking up subtherapeutic residues of the antibiotic used, in particular those that promote resistance.

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

Excessive dosages can lead to shortness of breath and circulatory depression. They can be partially antagonized with rapid initiation of intravenous treatment with neostigmine and calcium. Due to the ototoxicity and nephrotoxicity of neomycin, in case of overdose the corresponding symptoms are to be expected. Immediate discontinuation of the drug is required.

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

3.12 Withdrawal periods

Calves, lambs, pigs:
Meat and offal: 14 days

Broilers, layer hens, turkeys:
Meat and offal: 7 days
Eggs: Zero days

4. PHARMACOLOGICAL INFORMATION

4.1 ATCvet code :

QA07AA01

4.2 Pharmacodynamics

Spectrum of activity of neomycin mainly includes aerobic gram-negative bacteria. Anaerobic bacteria are generally resistant to neomycin.

Neomycin acts bactericidal by inhibiting bacterial protein synthesis. It binds to the 30S subunit of the bacterial ribosome and sterically alters it in such a way that neither the initiation of protein synthesis nor the completion of started peptides (elongation) can be carried out. In addition, there are transcription errors in the genetic code of the mRNA of the pathogen and the formation of "nosense" proteins.

The three main mechanisms of bacterial resistance to aminoglycosides are the reduction of the intracellular concentration of the antimicrobial by reduced drug uptake or from active efflux mechanisms, the modification of the molecular target by mutations at ribosomal level and, the enzymatic modification of the drug which is the most common.
Cross-resistance between neomycin and other antimicrobials from aminoglycoside group has been shown.

4.3 Pharmacokinetics

After oral administration to an intact mucosa, neomycin is only absorbed to a small extent. Absorption is increased in previously damaged mucosa of the gastrointestinal tract. Due to its hydrophilicity, neomycin is distributed in the extracellular space. From there it is actively absorbed into the bacterium. Neomycin is excreted unmetabolized via the bile and kidneys. The accumulation of the drug can damage the tubular epithelia of the renal cortex with very slow back diffusion.

Environmental properties

Neomycin is persistent in soil.

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.
No information is available on potential interactions or incompatibilities of this veterinary medicinal product administered orally by mixing into drinking water or liquid feed containing biocidal products, feed additives or other substances used in drinking water.

5.2 Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 3 years.
Shelf life after first opening the immediate packaging: 3 months.
Shelf life after dissolution in drinking water according to directions: 24 hours.
Shelf life after dissolution in milk replacer according to directions: 4 hours.

5.3 Special precautions for storage

This veterinary medicinal product does not require any special storage conditions.

5.4 Nature and composition of immediate packaging

The veterinary medicinal product is packed in thermos-sealed polyethylene / aluminium / polypropylene bags.

Package size:
100 g bag

1 kg bag

Not all pack sizes may be marketed.

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

Medicines should not be disposed of via wastewater or household waste.

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

S.P. VETERINARIA, S.A.

7. MARKETING AUTHORISATION NUMBER(S)

8. DATE OF FIRST AUTHORISATION

Date of first authorisation: DD/MM/YYYY

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

DD/MM/YYYY

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).