Summary of Product Characteristics

1 NAME OF THE VETERINARY MEDICINAL PRODUCT

DOPHEXINE 20 mg/g powder for use in drinking water/milk

2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each gram contains:
Active substance:

Bromhexine	18.2 mg
as bromhexine hydrochloride	20.0 mg

Excipients:
For the full list of excipients, see section 6.1.

3 PHARMACEUTICAL FORM

Powder for use in drinking water/milk.
White to off-white powder.

4 CLINICAL PARTICULARS

4.1 Target Species

Cattle (calves), pigs, chickens, turkeys, ducks.

4.2 Indications for use, specifying the target species

Mucolytic treatment of congested respiratory tract.

4.3 Contraindications

Do not use in cases of pulmonary oedema.
Do not use in cases of hypersensitivity to the active substance or to any of the excipients.

4.4 Special warnings for each target species

None.

4.5 Special precautions for use

Special precautions for use in animals

In case of serious lungworm infection, the drug should only be used 3 days after the commencement of the anthelmintic treatment.

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

This product may cause hypersensitivity reactions (allergy). People with known hypersensitivity to bromhexine or lactose should avoid contact with the product.
During preparation and administration inhalation of dust particles should be avoided. Wear an appropriate dust mask (either a disposable half-mask respirator conforming to European Standard EN149) or a non-disposable respirator to European Standard EN 140 with a filter to EN 143), when handling the product. If respiratory symptoms develop following exposure, seek medical advice and show this warning to the physician.
This product may cause irritation to the skin, eyes and mucous membranes. Avoid direct contact with the product. Wear gloves and protective glasses during the use of the product. Wash hands and any exposed skin after use. If accidental contact occurs,

rinse the affected area with large amounts of clean water.
Do not eat, drink or smoke while handling this product.

4.6 Adverse reactions (frequency and seriousness)

None known.

4.7 Use during pregnancy, lactation or lay

Studies in laboratory animals have not produced evidence of foetotoxic effects or effects on fertility at the recommended dose. However this has not been specifically studied in the target species. Use only accordingly to the benefit-risk assessment by the responsible veterinarian.

4.8 Interaction with other medicinal products and other forms of interactions

The product may be used in conjunction with antibiotics and/or sulphonamides and bronchodilators.
Bromhexine modifies the distribution of antibiotics in the organism and increases their concentration in the serum and in the nasal secretions (e.g. spiramycin, tylosin and oxytetracycline). When administered concomitantly with the product, antimicrobial agents should, nevertheless, not be underdosed.

4.9 Amounts to be administered and administration route

For oral use in drinking water/milk replacer.

0.45 mg of bromhexine per kg body weight daily, equivalent to 2.5 g of product per 100 kg body weight per day administered for 3 to 10 consecutive days.

The following formula may be used to calculate the required concentration of product (in milligrams of product per litre of drinking water/milk replacer):

$$\frac{\text{25 mg product per kg body weight per day} \times \text{mean body weight (kg) of animals to be treated}}{\text{mean daily water/milk replacer consumption (l) per animal}} = \ldots \text{ mg product per litre}$$

The required amount of product should be weighed as accurately as possible using suitably calibrated weighing equipment. The intake of medicated water/milk replacer depends on the clinical condition of the animals.

The maximum solubility of the product is 100 g/L in water at 20°C. The time required for complete dissolution varies from 3 minutes (10 g/L) to 15 minutes (100 g/L). For stock solutions and when using a proportioner, take care not to exceed the maximum solubility. Adjust flow rate settings of the dosing pump according to concentration of the stock solution and water intake of the animals to be treated. Any unused medicated water should be discarded after 24 hours.

For the preparation of the medicated milk replacer first dissolve the product in water. After dispersion of the milk powder add the solution of Dophexine under vigorous stirring for at least 3 minutes at ca. 40°C. The medicated milk should be freshly prepared prior to use and used within 6 hours.

Care should be taken that the intended dose will be completely ingested.

4.10 Overdose (symptoms, emergency procedures, antidotes), if necessary

None known.

4.11 Withdrawal period(s)

Cattle (calves): meat and offal: 2 days
Not authorised for use in animals producing milk for human consumption.

Pigs: meat and offal: zero days

Chickens, turkey, ducks: meat and offal: zero days

Not for use in birds producing eggs for human consumption, during and 4 weeks before the laying period.

5 PHARMACOLOGICAL or IMMUNOLOGICAL PROPERTIES

Pharmacotherapeutic group: Expectorants, excl. combinations with cough suppressants, mucolytics.
ATCvet-code: QR05CB02

5.1 Pharmacodynamic properties

Bromhexine is a mucoregulator. By activating the secretion of the seromucous glands, bromhexine helps to re-establish the viscosity and elasticity of bronchial secretions in the tracheobronchial tree.
In addition, its expectorant action encourages mobilisation of mucus and enables effective bronchial drainage, thereby improving the functioning and defence capability of the lung.
These two simultaneous actions lead to an abundant discharge and facilitate a productive cough.
It breaks down the network of acid glycoprotein fibres found in mucoid sputum, which are mainly responsible for the characteristic viscosity.

5.2 Pharmacokinetic particulars

In pigs, bromhexine is rapidly absorbed following oral administration with a peak plasma concentrations obtained in one to three hours. The concentration plateau is reached 12 hours after the second or third administration.
In calves, plasma concentrations increase progressively over several hours following administration.
In turkeys or chickens, peak plasma concentrations are reached within 2 to 4 hours of oral administration.
Due to the lipophilic character of bromhexine, it has a strong affinity for lipid tissues and a slow depletion profile from these tissues.
Bromhexine is largely metabolised into more polar compounds.
The apparent half-life of elimination of total plasma radioactivity after the last administration is 20 to 30 hours in a pig, 40 to 50 hours in cattle and 40 to 50 hours in chickens and turkeys.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Citric acid anhydrous
Propylene glycol
Lactose monohydrate

6.2 Major incompatibilities

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

6.3 Shelf-life

Shelf life of the veterinary medicinal product as packaged for sale: 30 months.
Shelf life after first opening of the immediate packaging: 3 months.
Shelf life after reconstitution in drinking water according to directions: 24 hours.
Shelf life after dilution in milk (replacer) according to directions: 6 hours.

6.4 Special precautions for storage

Do not store above 25°C.
Protect from light.

6.5 Nature and composition of immediate packaging

- Composite can: three-layered rectangular container, which consists of a cardboard base with an inner lining of aluminium-paper, covered with a low-density polyethylene lid.
The composite can contains of 1 kg of product.
- Securitainer: white cylindrical polypropylene container, covered with a low-density polyethylene lid.
The securitainer contains 1 kg of product.
- Bucket: white polypropylene square container provided with a polypropylene lid.
The bucket contains 1, 2.5 or 5 kg of product.

Not all pack sizes may be marketed.

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

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal product should be disposed of in accordance with local requirements.

7 MARKETING AUTHORISATION HOLDER

Dopharma Research B.V.
Zalmweg 24
4941 VX Raamsdonksveer
Netherlands

8 MARKETING AUTHORISATION NUMBER(S)

VPA10791/011/001

9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Date of first authorisation: 2nd October 2020

10 DATE OF REVISION OF THE TEXT