SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Colistin 2MIU/mL SOGEVAL concentrate for oral solution for calves, lambs, pigs, chickens and turkeys(FR)
Sogecoli 2 000 000 IU/ml concentrate for oral solution for calves, lambs, pigs, chickens and turkeys (UK, AT, DK, ES, IE, IT, NL, PT, RO)
Sogecoli 2 000 000 IU/ml concentrate for oral solution (PL, BE, DE)

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

One ml contains:
Active substance:
Colistin (as sulphate).....2000 000 IU
Excipients:
Benzyl alcohol (E1519)……0,01 ml

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Concentrate for oral solution
Clear, yellowish to orange solution

4. CLINICAL PARTICULARS

4.1 Target species

Cattle (Calves) – Sheep (lambs) – pigs – chickens – turkeys.

4.2 Indications for use, specifying the target species

Calves - lambs – pigs - chickens – turkeys.
Treatment and metaphylaxis of gastrointestinal infections caused by non-invasive *E. coli* susceptible to colistin
The presence of the disease in the herd should be established before metaphylactic treatment.

4.3 Contraindications

Do not use in case of known hypersensitivity to polypeptide antibiotics or to any of the excipients.
Do not use in case of resistance to polymyxins.
Do not use in horses, particularly in foals, since colistin, due to a shift in the gastrointestinal microflora balance could lead to the development of antimicrobial associated colitis (Colitis X), typically associated with *Clostridium difficile*, which may be fatal.

4.4 Special warnings for each target species

Colistin exerts concentration-dependent activity against Gram-negative bacteria. Following oral administration high concentrations are achieved in the gastrointestinal tract, i.e. the target site, due to the poor absorption of the substance. These factors

indicate that a longer duration of treatment than the one indicated in section 4.9, leading to unnecessary exposure, is not recommended.

4.5 Special precautions for use

i) Special precautions for use in animals

Do not use colistin as a substitute for good management practices.
Colistin is a last resort drug in human medicine for treatment of infections caused by certain multi-drug resistant bacteria. In order to minimise any potential risk associated with widespread use of colistin, its use should be limited to treatment or treatment and metaphylaxis of diseases, and should not be used for prophylaxis.
Whenever possible, colistin should only be used based on susceptibility testing.
Use of the product deviating from the instructions given in the SPC may lead to treatment failures and increase the prevalence of bacteria resistant to colistin.

In the case of newborn animals and of animals with severe gastrointestinal and renal disorders the absorption of colistin may be increased. Neurological or nephrotoxic symptoms may occur.

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

People with known hypersensitivity to polymyxins such as colistin should avoid contact with the veterinary medicinal product.
It is recommended to wear gloves when handling or administering the product.
Do not eat, drink or smoke while handling the product.

In case of accidental contact with eyes, wash with plenty of water, seek medical advice immediately and show the label to the physician.
Wash hands after use.

4.6 Adverse reactions (frequency and seriousness)

None known.

4.7 Use during pregnancy, lactation or lay

The safety of colistin during pregnancy, lactation or lay was not investigated in target species. However, the colistin is poorly absorbed after oral administration, therefore the use of colistin during pregnancy, lactation or lay should not lead to particular problems.

4.8 Interaction with other medicinal products and other forms of interaction

If possible, the combination with aminoglycosides should be avoided.

4.9 Amounts to be administered and administration route

To be administered orally

Calves, lambs and pigs:

100 000 IU of colistin per kilogram body weight i.e 0.5 ml of product per 10 kg body weight daily for 3-5 consecutive days. The recommended daily dose should be divided into two if the product is to be administered directly into the mouth of the animal.

chickens and turkeys:
75 000 IU of colistin per kilogram body weight i.e 37.5 ml of product per 1000 kg body weight daily for 3-5 consecutive days.
Duration of treatment should be limited to the minimum time necessary for the treatment of the disease.
Administration via drinking water and milk/milk replacer.
The uptake of medicated water/milk depends on the physiological and clinical conditions of the animals. In order to obtain the correct dosage the concentration of colistin has to be adjusted accordingly.

Carefully calculate the average body weight to be treated and the average daily water consumption before each treatment. Medicated water should be prepared every day. Medicated milk should be prepared immediately prior to provision.

The medicated water should be the only source of drinking water for the animals for the entire duration of the treatment period.

With the following formula, we can calculate an exact dosage:

$$\frac{\text{...ml of the product per kg body weight and day} \times \text{Average body weight (kg)}}{\text{Average daily water intake (l/animal)}} = \text{...ml of the product per litre of drinking water}$$

- Administration without a dosing pump:

The treatment is distributed in a tank over a period of 24 hours, for 3 to 5 consecutive days.
The product is added to a volume of the drinking water corresponding to the volume consumed by the animals over the treatment period (24 hours) to achieve a dose of 100 000 IU of colistin per kg body weight for pigs lambs and calves and 75 000 IU of colistin per kg body weight forchickens and turkeys.

- Administration via a dosing pump

The treatment is distributed over a period of 24 hours, for 3 to 5 consecutive days. A dosing pump is used to add a stock solution at a pre-determined concentration to the drinking water.

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

None.

4.11 Withdrawal period(s)

Calves, lambs and pigs
Meat and offal: 1 day

Chickens and turkeys
Meat and offal: 1 day
Eggs: zero days

5. PHARMACOLOGICAL PROPERTIES

Pharmacotherapeutic group: Intestinal antiinfectives, antibiotics
ATCvet code: QA07AA10

5.1 Pharmacodynamic properties

Colistin is a polypeptide antibiotic belonging to the polymyxin class.
Colistin exerts a bactericidal action on susceptible bacterial strains by disruption of the bacterial cytoplasmic membrane leading to an alteration of cell permeability and then a leakage of intracellular materials.

Colistin has a potent bactericidal action against gram negative bacteria especially enterobacteria and more particularly *Escherichia coli*.
Colistin possesses virtually no activity against gram positive bacteria and fungi.

Gram-positive bacteria are naturally resistant to colistin, as are some species of gram-negative bacteria such as *Proteus* and *Serratia*.

However, acquired resistance of gram-negative enteric bacteria to colistin is rare and explained by a single step mutation.

In vitro sensibility of Colistin against *Escherichia coli* strains isolated from pigs and poultry have been determined, with the following MIC_{50} and MIC_{90} values:

	MIC_{50}	MIC_{90}
Escherichia coli from pigs	0,19 µg/ml	4,0 µg/ml
Escherichia coli from poultry	0,25 µg/ml	0,38 µg/ml

Colistin exerts concentration-dependent activity against Gram-negative bacteria.
Following oral administration high concentrations are achieved in the gastrointestinal tract, i.e. the target site, due to the poor absorption of the substance.

5.2 Pharmacokinetic particulars

Colistin is poorly absorbed from the gastro-intestinal tract. In contrast to the very low concentrations of colistin in serum and tissues, high and persistent amounts are present within the different sections of the gastro intestinal tract.
No significant metabolism is observed.
Colistin is almost exclusively eliminated via the faeces.

5.3 Environmental Properties

The active ingredient colistin sulphate is persistent in soils.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Benzyl alcohol (E1519)
Sodium acetate trihydrate (for pH adjustment)
Acetic acid glacial (for pH adjustment)
Purified water

6.2 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: 18 months
Shelf life after first opening the immediate packaging: 3 months
Shelf life after dilution in drinking water according to directions: 24 hours
Shelf life after dilution in milk or milk substitute according to directions: 6 hours

6.4. Special precautions for storage

Do not store above 30 °C.
Any medicated water which is not consumed within 24 hours should be discarded.
Any medicated milk which is not consumed within 6 hours should be discarded.

6.5 Nature and composition of immediate packaging

High density polyethylene white opaque bottle of 100 ml, 250ml, 500ml with high density polyethylene cap and Polyethylene/Polyethylene/Polyethylene seal
High density polyethylene white opaque bottle of 1 litre with high density polyethylene cap and low density polyethylene/kraft/wax/aluminium/polyethylene seal
High density polyethylene white opaque barrel of 5 litres with high density polyethylene cap and cardboard/wax/aluminium/polyethylene terephthalate/polyethylene seal

Not all pack sizes may be marketed.

6.6 Special precautions for the disposal of unused veterinary medicinal product 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

Ceva Animal Health Ltd
Unit 3, Anglo Office Park
White Lion Road
Amersham
Buckinghamshire
HP7 9FB

8. MARKETING AUTHORISATION NUMBER

Vm 15052/4114

9. DATE OF FIRST AUTHORISATION

14 August 2014

10. DATE OF REVISION OF THE TEXT

June 2016

16 June 2016