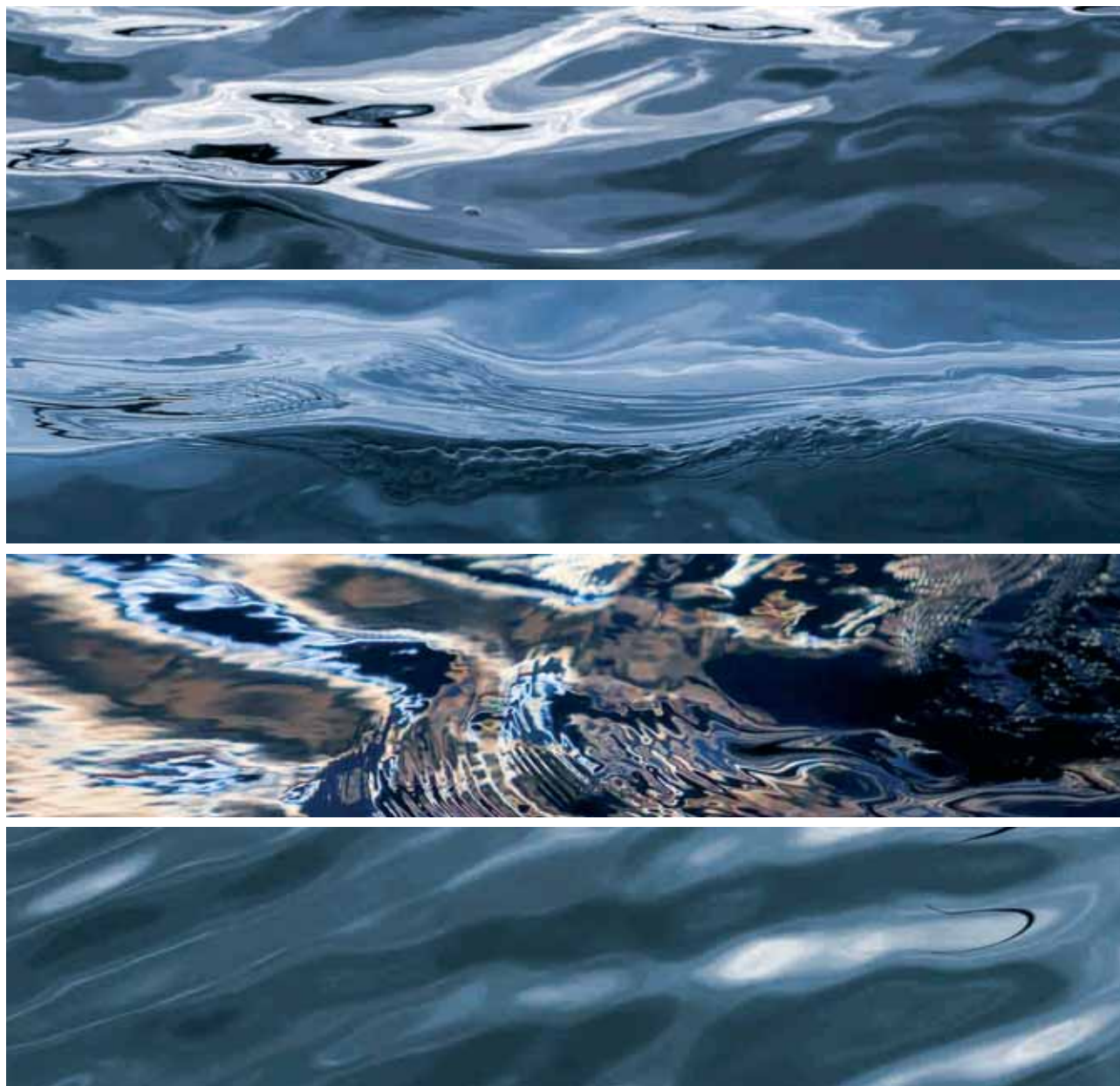


# COLIPLUS *Colistin*

*2,000,000 IU/ml concentrate for  
Oral Solution for use in drinking water  
for Cattle, Sheep, Swine and Chickens*



Oral solution colistin with high  
stability in all kind of waters

**An efficient treatment  
is guaranteed**



*Animal health and welfare*

# COLIPLUS ORAL SOLUTION

*Colistin*

## Properties of colistin

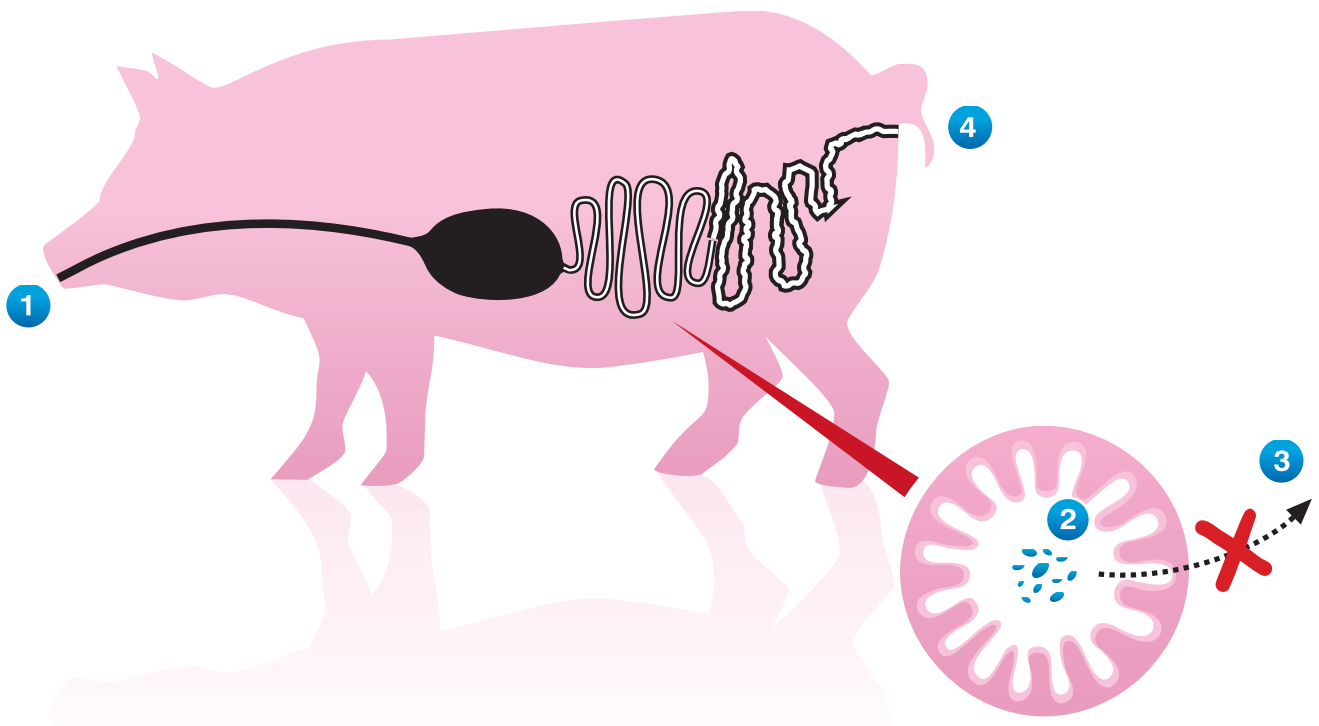
### COLIPLUS ORAL SOLUTION:

Name:  
**COLIPLUS**  
2,000,000 IU/ml concentrate for  
Oral Solution for use in drinking water  
for Cattle, Sheep, Swine and Chickens

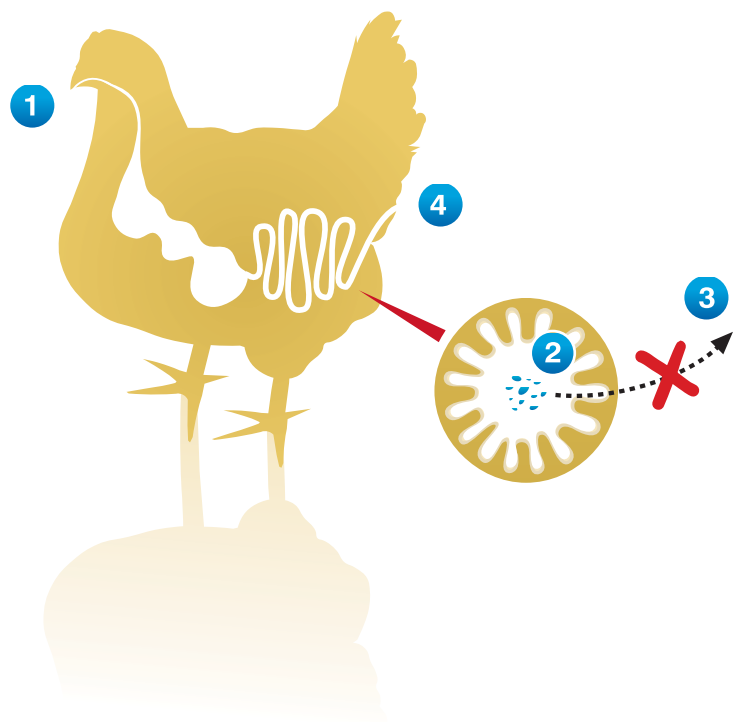
Composition:  
Colistin (sulphate) 2,000,000 IU/ml

Group:  
Polypeptides

#### 1. Practically not absorbed



1. Oral administration.
2. Antibacterial effect in the gut.
3. No absorption, practically not detected in the blood plasma.
4. Eliminated through the faeces.

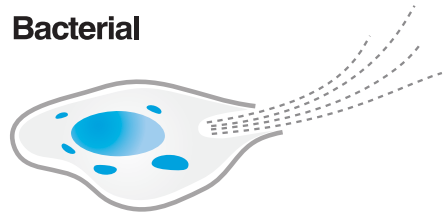




*Escherichia coli*

2. Has a **strong bactericide effect**.  
Working at two levels:

#### Bacterial



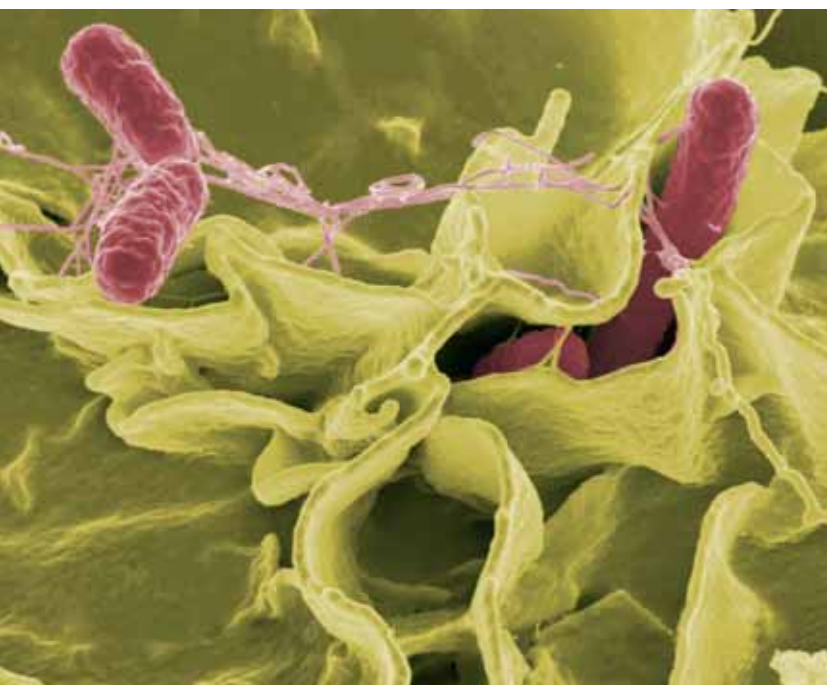
1. Alters the permeability of the cell membrane of the bacteria.
2. Loss of bacterial elements.
3. Death of the bacteria.

#### Endotoxines

- Reduces the activity of the bacterial endotoxins in the tissue liquids.

3. **Efficacy of colistin:**

Colistin is effective against *Escherichia coli*.



*Escherichia coli* is a pathogen of great clinical and economic importance in pig and poultry farms.

# COLIPLUS ORAL SOLUTION

*Colistin*

## Advantages of liquid vs powder medication

Quick and easy dissolution.

More homogeneity

More stability

Lack of precipitates:

- Avoids the inactivation of the product (avoiding subdosifications)
- Avoids the obstruction of tubes and nipples.
- Reduces the risk of interactions with other products.

**Coliplus Oral Solution: High homogeneity and security in the drinking water**

## Advantages of medication in water vs medication in feed

### **Quick:**

As soon as the veterinarian detects the pathology, the treatment can be started.

### **Flexible:**

The treatment can be adapted to the time and dose the veterinarian believes is the best. An in-water treatment permits the introduction of pulsatile treatments.

### **Efficacy:**

It is well known that pigs under stress usually stop eating, although they continue drinking. An in-water medication ensures the efficacy of the treatment.

### **Economy:**

Enables to adapt the treatment in days and dose to optimize the costs.

**Coliplus Oral Solution: A quick, flexible, efficient and economic solution**







## Swine

### DOSE:

100,000 IU of colistin activity/kg b.w./day for 3-5 consecutive days by oral route,  
0.50 ml of COLIPLUS Oral Solution/10 kg b.w./day for 3-5 consecutive days.

*Withdrawal period: 1 day*



## Chickens

### DOSE:

75,000 IU of colistin activity/kg b.w./day for 3-5 consecutive days by oral route,  
37.5 ml of COLIPLUS Oral Solution/Ton b.w./day for 3-5 consecutive days.

*Withdrawal period: meat: 1 day  
Eggs: 0 days*



## Cattle and Sheep

### DOSE:

100,000 IU of colistin activity/kg b.w./day for 3-5 consecutive days by oral route,  
0.50 ml of COLIPLUS Oral Solution/10 kg b.w./day for 3-5 consecutive days.

*Withdrawal period: meat: 1 day  
Milk: Not permitted for use in animals producing milk for human consumption*

Note: The recommended daily dose should be divided into two if the product is to be administrated directly into the mouth of the animal.

### Administration via drinking water

The uptake of medicated water 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 total body mass to be treated and the total daily water consumption before each treatment. Medicated water should be made every day, 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:

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

**An efficient treatment is guaranteed**

# COLIPLUS ORAL SOLUTION

*Colistin*

## Stability in drinking water

The stability of a product in the water is extremely important and it determines, up to certain grade, its quality.

A high stability:

- Guarantees an adequate and secure treatment
- Avoids product subdosifying
- Avoids resistance problems
- Reduces treatment costs



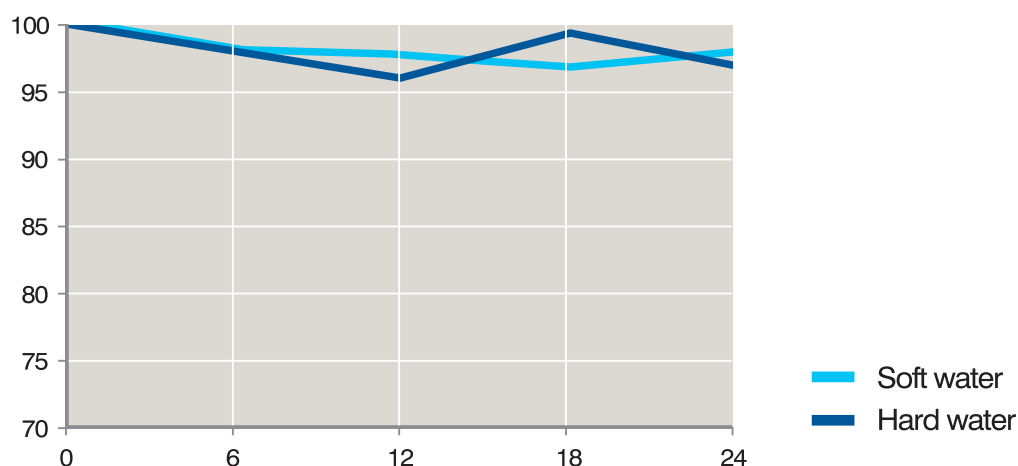
## Stability trial in drinking water with COLIPLUS Oral Solution

The main objective of the trial was to determine the stability of colistin sulphate (COLIPLUS Oral Solution) in drinking water following the established Guideline EMEA/CVMP/540/03 “*Quality aspects of pharmaceutical veterinary medicines for administration in drinking water*”.

### The study was performed with:

- Two types of drinking water: soft water (20 ppm CaCO<sub>3</sub>, pH 5-7) and hard water (200 ppm CaCO<sub>3</sub>, pH 8-9).
- Stability was determined at different times: 0, 6, 12, 18 and 24 hours.
- Under light exposure after its solution in drinking water, as required in the guideline.

Content in colistin sulphate, %



### Results:

- Colistin sulphate (COLIPLUS Oral Solution) content remained within the range 95-100% with respect to the initial content, during 24 hours after its solution in drinking water. Even after submitting the product to the worst conditions during the trial period:
  - Hard water
  - Light exposure
- No significant differences were noted between the different kinds of water (soft or hard).

Hours	Soft water, %	Hard water, %
0	100	100
6	98,03	98,04
12	97,66	96,07
18	96,76	99,36
24	97,78	97,06

**COLIPLUS Oral Solution presents a high stability in drinking water, even under unfavourable conditions: hard waters and light exposure.**



## COLIPLUS *Colistin*

*2,000,000 IU/ml concentrate for  
Oral Solution for use in drinking water  
for Cattle, Sheep, Swine and Chickens*

Oral solution colistin with high  
stability in all kind of waters

**An efficient treatment  
is guaranteed**

COLIPLUS 2,000,000 IU/ml Concentrate for Oral Solution for use in drinking water for Cattle, Sheep, Swine and Chickens. Clear yellow-brown solution. COMPOSITION for 1 ml: Active substance: Colistin (as Colistin sulfate) 2 MIU (equivalent to 83.33 mg); Excipient(s): Benzyl Alcohol 10 mg, Disodium edentate 0.1 mg; TARGET SPECIES: Cattle (calves), sheep (lambs), swine and chickens. INDICATIONS: Treatment of gastrointestinal infections caused by non-invasive *Escherichia coli* susceptible to colistin. DOSAGE: To be administered orally. Calves, lambs and pigs: The recommended dose is 100 000 IU of colistin per kilogram 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. Poultry: The recommended dose is 75 000 IU of colistin per kilogram body weight daily for 3-5 consecutive days. WITHDRAWAL PERIODS: Meat and offal: Calves, Lambs, Pigs and Poultry: 1 day. Eggs: Zero days. Not permitted for use in animals producing milk for human consumption. For animal treatment only - to be supplied only on veterinary prescription. Marketing authorisation holder: DIVASA - FARMAVIC, S.A. Ctra. Sant Hipòlit, km 71, 08503 GURB - VIC, Barcelona (Spain). Tel: + 34 93 886 01 00. Fax: + 34 93 886 01 31.