

## **SUMMARY OF PRODUCT CHARACTERISTICS**

### **1. NAME OF THE VETERINARY MEDICINAL PRODUCT**

Endogard Plus XL Tablets for dogs

### **2. QUALITATIVE AND QUANTITATIVE COMPOSITION**

Each tablet contains:

#### **Active substances:**

Praziquantel	175 mg
Pyrantel embonate	504 mg
Febantel	525 mg

#### **Excipients:**

For the full list of excipients, see section 6.1.

### **3. PHARMACEUTICAL FORM**

Tablets

Oval, biconvex tablets with bevelled edges and scored on both sides. Slightly greenish-yellow.

The tablets can be divided into equal halves.

### **4. CLINICAL PARTICULARS**

#### **4.1 Target species**

Dogs (large and extra large size)

#### **4.2 Indications for use, specifying the target species**

For the treatment of mixed infestations with the following roundworms and tapeworms in adult dogs:

Nematodes:

Ascarids: *Toxocara canis*, *Toxascaris leonina* (late immature forms and mature forms)

Hookworms: *Uncinaria stenocephala*, *Ancylostoma caninum* (adults)

Cestodes:

Tapeworms: *Taenia* spp., *Dipylidium caninum*

#### **4.3 Contraindications**

Do not use simultaneously with piperazine compounds.

Do not use in animals with a known hypersensitivity to the active substance or to any of excipients.

Do not exceed the stated dosage when treating pregnant bitches.

#### **4.4 Special warnings for each target species**

Fleas serve as intermediate hosts for one common type of tapeworm – *Dipylidium caninum*. Tapeworm infestation is certain to re-occur unless control of intermediate hosts such as fleas, mice etc. is undertaken.

#### **4.5 Special precautions for use**

##### Special precautions for use in animals

This product is not recommended for use in dogs under 17.5 kg body weight. Any part-used tablets should be discarded.

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

In the interests of good hygiene, persons administering the tablet directly to a dog or by adding it to the dog's food, should wash their hands afterwards.

In case of accidental ingestion, seek medical advice and show the package leaflet to the physician.

#### **4.6 Adverse reactions (frequency and seriousness)**

In very rare cases vomiting, with or without diarrhoea, may occur.

The frequency of adverse reactions is defined using the following convention:

- very common (more than 1 in 10 animals displaying adverse reactions during the course of one treatment)
- common (more than 1 but less than 10 animals in 100 animals)
- uncommon (more than 1 but less than 10 animals in 1,000 animals)
- rare (more than 1 but less than 10 animals in 10,000 animals)
- very rare (less than 1 animal in 10,000 animals, including isolated reports).

#### **4.7 Use during pregnancy, lactation or lay**

Consult a veterinary surgeon before treating pregnant animals for roundworms.

The product may be used during lactation (see also Sections 4.3 and 4.9).

Do not use in bitches during the first two-thirds of pregnancy.

#### **4.8 Interaction with other medicinal products and other forms of interaction**

Do not use simultaneously with piperazine as the anthelmintic effects of pyrantel and piperazine (used in many worming products for dogs) may be antagonized.

Concurrent use with other cholinergic compounds can lead to toxicity.

#### **4.9 Amounts to be administered and administration route**

For oral administration.

Dosage

The recommended dose rates are: 15 mg/kg bodyweight febantel, 14.4 mg/kg pyrantel and 5 mg/kg praziquantel. This is equivalent to 1 tablet per 35 kg bodyweight.

Tablets may be halved to allow accuracy of dosing.

#### Administration and Duration of Treatment

No restriction of access to food is required either before or after administration of the product. The tablet(s) can be given directly to the dog or disguised in food.

To ensure administration of a correct dose, bodyweight should be determined as accurately as possible.

For the control of *Toxocara*, nursing bitches should be dosed 2 weeks after giving birth and every 2 weeks until weaning.

In the event of a heavy roundworm infestation, a repeat dose should be given after 14 days.

For routine control adult dogs should be treated every 3 months.

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

The product is well tolerated in dogs. In safety studies, doses of up to five times the recommended dose gave rise to occasional vomiting.

#### **4.11 Withdrawal period(s)**

Not applicable.

### **5. PHARMACOLOGICAL PROPERTIES**

Pharmacotherapeutic group: Anthelmintics, Benzimidazoles and related substances, ATCvet code: QP52AC55

#### **5.1 Pharmacodynamic properties**

The product contains anthelmintics active against roundworms and tapeworms. The product contains three active substances: febantel, pyrantel embonate (pamoate) and praziquantel, a partially hydrogenated pyrazino-isoquinoline derivative used widely as an anthelmintic for both human and veterinary use.

Pyrantel acts as a cholinergic agonist. Its mode of action is to stimulate nicotinic cholinergic receptors of the parasite, induce spastic paralysis and thereby allow removal from the gastro-intestinal (GI) system by peristalsis.

With the mammalian system febantel undergoes ring closure forming fenbendazole and oxfendazole. It is these chemical entities which exert the anthelmintic effect by inhibition of tubulin polymerization. Formation of microtubules is thereby prevented, resulting in disruption to structures vital to the normal functioning of the helminth. Glucose uptake, in particular, is affected, leading to depletion in cell ATP. The parasite dies upon exhaustion of its energy reserves, which occurs 2 – 3 days later.

Praziquantel is very rapidly absorbed and distributed throughout the parasite. Both *in vitro* and *in vivo* studies have shown that praziquantel causes severe damage to the parasite integument, resulting in contraction and paralysis. There is an almost

instantaneous tetanic contraction of the parasite musculature and a rapid vacuolisation of the syncytial tegument. This rapid contraction has been explained by changes in divalent cation fluxes, especially calcium.

In this fixed combination product pyrantel and febantel act synergistically against all relevant nematodes in dogs. In particular, the activity spectrum covers *Toxocara canis*, *Toxascaris leonina*, *Uncinaria stenocephala* and *Ancylostoma caninum*. The spectrum of activity of praziquantel covers also cestode species in dogs, in particular all *Taenia* spp. and *Dipylidium caninum*. Praziquantel acts against adult and immature forms of these parasites.

## **5.2 Pharmacokinetic particulars**

Perorally administered praziquantel is absorbed almost completely from the intestinal tract. After absorption, the drug is distributed to all organs. Praziquantel is metabolized into inactive forms in the liver and secreted in bile. It is excreted within 24 hours to more than 95% of the administered dosage. Only traces of non-metabolised praziquantel is excreted.

The pamoate salt of pyrantel has low aqueous solubility, an attribute that reduces absorption from the gut and allows the drug to reach and be effective against parasites in the large intestine. Because of the low systemic absorption of pyrantel pamoate, there is very little danger of adverse reactions/toxicity in the host. Following absorption, pyrantel pamoate is quickly and almost completely metabolized into inactive metabolites that are excreted rapidly in the urine.

Febantel is absorbed relatively rapidly and metabolized to a number of metabolites including fenbendazole and oxfendazole, which have anthelmintic activity.

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

Lactose monohydrate  
Maize starch  
Povidone K-30  
Sodium laurilsulfate  
Microcrystalline cellulose (E460)  
Colloidal anhydrous silica  
Magnesium stearate (E572)

### **6.2 Incompatibilities**

None known.

### **6.3 Shelf life**

Shelf-life of the veterinary medicinal product as packaged for sale: 3 years.

### **6.4. Special precautions for storage**

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

#### **6.5 Nature and composition of immediate packaging**

Print and perforated Alu-Alu blister: 2 tablets (1 blister with 2 tablets), in a box.  
Print and perforated Alu-Alu blister: 4 tablets (2 blisters with 2 tablets), in a box.  
Print and perforated Alu-Alu blister: 10 tablets (1 blister with 10 tablets), in a box.  
Print and perforated Alu-Alu blister: 12 tablets (2 blisters with 6 tablets), in a box.  
Print and perforated Alu-Alu blister: 24 tablets (4 blisters with 6 tablets), in a box.  
Print and perforated Alu-Alu blister: 30 tablets (3 blisters with 10 tablets or 5 blisters with 6 tablets), in a box.  
Print and perforated Alu-Alu blister: 50 tablets (5 blisters with 10 tablets), in a box.  
Print and perforated Alu-Alu blister: 60 tablets (10 blisters with 6 tablets or 6 blisters with 10 tablets), in a box.  
Print and perforated Alu-Alu blister: 100 tablets (10 blisters with 10 tablets), in a box.  
Print and perforated Alu-Alu blister: 102 tablets (17 blisters with 6 tablets), in a box.  
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**

KRKA, d.d., Novo mesto  
Šmarješka cesta 6  
8501 Novo mesto  
Slovenia

### **8. MARKETING AUTHORISATION NUMBER**

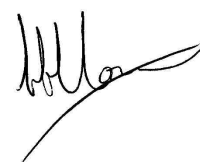
Vm 01656/4018

### **9. DATE OF FIRST AUTHORISATION**

02 June 2011

### **10. DATE OF REVISION OF THE TEXT**

April 2018



Approved 05 April 2018