

## **SUMMARY OF PRODUCT CHARACTERISTICS**

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

Vominil 10 mg/ml solution for injection for dogs and cats

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

Each ml contains:

**Active substance:**

Maropitant (as maropitant citrate monohydrate) 10 mg

**Excipients:**

n-Butanol 22 mg

For the full list of excipients, see section 6.1.

### **3. PHARMACEUTICAL FORM**

Solution for injection

Clear, colourless to almost colourless solution.

### **4. CLINICAL PARTICULARS**

#### **4.1 Target species**

Dogs and cats

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

Dogs

- For the treatment and prevention of nausea induced by chemotherapy.
- For the prevention of vomiting except that induced by motion sickness.
- For the treatment of vomiting, in combination with other supportive measures.
- For the prevention of perioperative nausea and vomiting and improvement in recovery from general anaesthesia after use of the  $\mu$ -opiate receptor agonist morphine.

Cats

- For the prevention of vomiting and the reduction of nausea, except that induced by motion sickness.
- For the treatment of vomiting, in combination with other supportive measures.

#### **4.3 Contraindications**

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**

Vomiting can be associated with serious, severely debilitating conditions including gastrointestinal obstructions; therefore, appropriate diagnostic evaluations should be employed.

Good veterinary practice indicates that antiemetics should be used in conjunction with other veterinary and supportive measures such as dietary control and fluid replacement therapy while addressing the underlying causes of the vomiting.

The use of the veterinary medicinal product against vomiting due to motion sickness is not recommended.

Dogs:

Although maropitant has been demonstrated to be effective in both the treatment and prevention of emesis induced by chemotherapy, it was found more efficacious if used preventively. Therefore, it is recommended to administer the antiemetic prior to administration of the chemotherapeutic agent.

Cats:

The efficacy of maropitant in reduction of nausea was demonstrated in studies using a model (xylazine-induced nausea).

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

i). Special precautions for use in animals

The safety of the veterinary medicinal product has not been established in dogs less than 8 weeks of age, or in cats less than 16 weeks of age, and in pregnant or lactating dogs and cats. Use only according to the benefit-risk assessment by the responsible veterinarian.

Maropitant is metabolised in the liver and therefore should be used with caution in patients with hepatic disease. As maropitant is accumulated in the body during a 14-day treatment period due to metabolic saturation, careful monitoring of liver function and any adverse events should be implemented during long term treatment.

The veterinary medicinal product should be used with caution in animals suffering from or with predisposition for cardiac diseases as maropitant has affinity to Ca- and K-ion channels. Increases of approximately 10% in the QT interval of the ECG were observed in a study on healthy beagle dogs administered 8 mg/kg orally; however, such an increase is unlikely to be of clinical significance.

Due to the frequent occurrence of transient pain during subcutaneous injection, appropriate animal restraining measures may have to be applied. Injecting the veterinary medicinal product at refrigerated temperature may reduce pain at injection.

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

This product may cause skin sensitisation. People with known hypersensitivity to maropitant should administer the veterinary medicinal product with caution. Wash the exposed skin immediately after exposure with large amounts of water. If you develop symptoms such as a rash after accidental exposure, seek medical advice and show the physician this warning.

This veterinary medicinal product may be irritant to the eyes. Avoid eye contact. In case of accidental contact of the product with eyes rinse abundantly with fresh water. If symptoms occur, seek the advice of a physician.

Maropitant is a neurokinin-1 (NK1) receptor antagonist that acts in the central nervous system. Accidental self-injection or ingestion may result in nausea, dizziness and somnolence. Care should be taken to avoid accidental self-injection. In case of accidental oral intake or self-injection seek medical advice immediately and show the package leaflet or the label to the physician.

Wash hands after use.

Special precautions for the protection of the environment  
Not applicable.

iii). Other precautions

Not applicable.

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

**Dogs and cats:**

Very common (>1 animal / 10 animals treated):	Injection site pain*
Very rare (<1 animal / 10,000 animals treated, including isolated reports):	Anaphylactic-type reaction, allergic oedema, urticaria, erythema, collapse, dyspnoea, pale mucous membrane;  Lethargy;  Neurological disorders (e.g. ataxia, convulsion/ seizure, muscle tremor)

\*May occur when injected subcutaneously. In approximately one third of cats moderate to severe response to injection is observed.

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 also the last section of the package leaflet for respective contact details.

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

Use only accordingly to the benefit-risk assessment by the responsible veterinarian because conclusive reproductive toxicity studies have not been conducted in any animal species.

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

The veterinary medicinal product should not be used concomitantly with Ca-channel antagonists as maropitant has affinity to Ca-channels. Maropitant is highly bound to plasma proteins and may compete with other highly bound medicines.

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

For subcutaneous or intravenous use.

The veterinary medicinal product should be injected subcutaneously or intravenously, once daily, at a dose of 1 mg/kg bodyweight (1 ml/10 kg bodyweight) for up to 5 consecutive days. Intravenous administration of the veterinary medicinal product should be given as a single bolus without mixing the product with any other fluids.

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

To prevent vomiting, the veterinary medicinal product should be administered more than 1 hour in advance. The duration of effect is approximately 24 h and therefore treatment can be given the night before administration of an agent that may cause emesis e.g. chemotherapy.

As the pharmacokinetic variation is large and maropitant accumulates in the body after once daily repeated administration, lower doses than recommended might be sufficient in some individuals and when repeating the dose.

For administration by subcutaneous injection, see also 'special precautions for use' (section 4.5).

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

Apart from transient reactions at the injection site following subcutaneous administration, the active substance, maropitant was well tolerated in dogs and young cats injected daily with up to 5 mg/kg (5 times the recommended dose) for 15 consecutive days (3-times the recommended duration of administration). No data is available on overdoses in adult cats.

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

Not applicable.

## 5. PHARMACOLOGICAL PROPERTIES

**Pharmacotherapeutic group: Antiemetics and antinauseants - Maropitant**

**ATC Vet Code: QA04AD90**

### 5.1 Pharmacodynamic properties

Vomiting is a complex process coordinated centrally by the emetic centre. This centre consists of several brainstem nuclei (area postrema, nucleus tractus solitarius, dorsal motor nucleus of the vagus) that receive and integrate sensory stimuli from central and peripheral sources and chemical stimuli from the circulation and the cerebro-spinal fluid.

Maropitant is a neurokinin 1 (NK1) receptor antagonist, which acts by inhibiting the binding of substance P, a neuropeptide of the tachykinin family. Substance P is found in significant concentrations in the nuclei comprising the emetic centre and is considered the key neurotransmitter involved in vomiting. By inhibiting the binding of substance P within the emetic centre, maropitant is effective against neural and humoral (central and peripheral) causes of vomiting.

A variety of *in vitro* assays have demonstrated that maropitant binds selectively at the NK1 receptor with dose-dependent functional antagonism of substance P activity.

Maropitant is effective against vomiting. The anti-emetic efficacy of maropitant against central and peripheral emetics was demonstrated in experimental studies including apomorphine, cisplatin and syrup of ipecac (dogs) and xylazine (cats).

Signs of nausea in dogs including excessive salivation and lethargy might remain after treatment.

### 5.2 Pharmacokinetic particulars

#### Dogs

The pharmacokinetic profile of maropitant when administered as a single subcutaneous dose of 1 mg/kg body weight to dogs was characterised by a maximum concentration ( $C_{max}$ ) in plasma of approximately 92 ng/ml; this was achieved within 0.75 hours post-dosing ( $T_{max}$ ). Peak concentrations were followed by a decline in systemic exposure with an apparent elimination half-life ( $t_{1/2}$ ) of 8.84 hours. Following a single intravenous dose at 1 mg/kg the initial plasma concentration was 363 ng/ml. The volume of distribution at steady-state ( $V_{ss}$ ) was 9.3 l/kg and systemic clearance was 1.5 l/h/kg. The elimination  $t_{1/2}$  following intravenous dosing was approximately 5.8 h.

During clinical studies maropitant plasma levels conferred efficacy from 1 hour after administration. The bioavailability of maropitant after subcutaneous administration in dogs was 90.7%. Maropitant displays linear kinetics when administered subcutaneously within the 0.5–2 mg/kg dose range.

Following repeated subcutaneous administration of once-daily doses of 1 mg/kg bodyweight for five consecutive days, accumulation was 146%. Maropitant undergoes cytochrome P450 (CYP) metabolism in the liver. CYP2D15 and CYP3A12 were identified as the canine isoforms involved in the hepatic biotransformation of maropitant.

Renal clearance is a minor route of elimination, with less than 1% of a 1 mg/kg subcutaneous dose appearing in the urine as either maropitant or its major metabolite. Plasma protein binding of maropitant in dogs is more than 99%.

### **Cats**

The pharmacokinetic profile of maropitant when administered as a single subcutaneous dose of 1 mg/kg body weight to cats was characterised by a maximum concentration ( $C_{max}$ ) in plasma of approximately 165 ng/ml; this was achieved on average 0.32 hours (19 min) post-dosing ( $T_{max}$ ). Peak concentrations were followed by a decline in systemic exposure with an apparent elimination half-life ( $t_{1/2}$ ) of 16.8 hours. Following a single intravenous dose at 1 mg/kg the initial plasma concentration was 1040 ng/ml. The volume of distribution at steady-state ( $V_{ss}$ ) was 2.3 l/kg and systemic clearance was 0.51 l/h/kg. The elimination  $t_{1/2}$  following intravenous dosing was approximately 4.9 h. There appears to be an age-related effect on the pharmacokinetics of maropitant in cats with kittens having higher clearance than adults.

During clinical studies maropitant plasma levels conferred efficacy from 1 hour after administration.

The bioavailability of maropitant after subcutaneous administration in cats was 91.3%. Maropitant displays linear kinetics when administered subcutaneously within the 0.25–3 mg/kg dose range.

Following repeated subcutaneous administration of once-daily doses of 1 mg/kg bodyweight for five consecutive days, accumulation was 250%. Maropitant undergoes cytochrome P450 (CYP) metabolism in the liver. CYP1A and CYP3A-related enzymes were identified as the feline isoforms involved in the hepatic biotransformation of maropitant.

Renal and faecal clearances are minor routes of elimination for maropitant, with less than 1% of a 1 mg/kg subcutaneous dose appearing in the urine or faeces as maropitant. For the major metabolite 10.4% of the maropitant dose was recovered in urine and 9.3% in faeces. Plasma protein binding of maropitant in cats was estimated to be 99.1%.

## **6. PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

n-Butanol  
Dexolve (SBECD)  
Water for injections

## **6.2 Major Incompatibilities**

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

## **6.3 Shelf life**

Shelf life of the veterinary medicinal product as packaged for sale: 30 months  
Shelf life after first opening the immediate packaging: 28 days

## **6.4 Special precautions for storage**

Do not freeze.

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

Amber glass vial type I (Ph. Eur.) with 10 ml, 25 ml or 50 ml solution for injection, closed with a chlorobutyl rubber stopper, type I (Ph. Eur) and aluminium pull or flip off cap in a cardboard box.

Pack sizes:

10 ml, 25 ml, 50 ml, 5 x 10 ml

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**

Medicines should not be disposed of via wastewater.

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**

VetViva Richter GmbH  
Durisolstrasse 14  
4600 Wels  
Austria

## **8. MARKETING AUTHORISATION NUMBER**

Vm 57446/5004

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

29 September 2023

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

September 2023

#### **PROHIBITION OF SALE, SUPPLY AND/OR USE**

#### **11. CLASSIFICATION OF VETERINARY MEDICINAL PRODUCTS**

Veterinary medicinal product subject to prescription.

Approved 29 September 2023

