1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Torbuphanol Vet 10 mg/ml solution for injection for horses, dogs and cats

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each ml contains:

Active substance:
Butorphanol as butorphanol tartrate 10 mg

Excipients:

Qualitative composition of excipients and other constituents	**Quantitative composition if that information is essential for proper administration of the veterinary medicinal product**
Benzethonium chloride	0.1 mg
Citric acid monohydrate	
Sodium citrate	
Sodium chloride	
Water for injections	

Clear, colourless solution for injection.

3. CLINICAL INFORMATION

3.1 Target species

Horses, dogs and cats.

3.2 Indications for use for each target species

HORSES
As an analgesic
For relief of pain associated with colic of gastrointestinal tract origin.
As a sedative
For sedation when given after the administration of certain alpha2-adrenoreceptor agonists (detomidine, romifidine).
For therapeutic and diagnostic procedures such as minor standing surgery.

DOGS
As an analgesic
For relief of mild to moderate visceral pain and pain associated with post-surgical procedures.
As a sedative
In combination with medetomidine hydrochloride.
As a pre-anaesthetic
Pre-anaesthetic use of the product has resulted in a dose related reduction in the dose of induction anaesthetic agents, such as thiopentone sodium.
As an anaesthetic: For anaesthesia in combination with medetomidine and ketamine.

CATS
As an analgesic
For relief of mild to moderate visceral pain. For pre-operative use to provide analgesia during surgery. For post-operative analgesia after a variety of surgical procedures.

As a sedative
In combination with medetomidine hydrochloride.
As anaesthetic: For anaesthesia in combination with medetomidine and ketamine.

3.3 Contraindications

Do not use in cases of hypersensitivity to the active substance or to any of the excipients. Do not use in animals with severe dysfunction of the liver or kidneys.
Use of butorphanol is contraindicated in case of cerebral injury or organic brain lesions and in animals with obstructive respiratory diseases, heart dysfunction or spastic conditions.

HORSES
Butorphanol/detomidine hydrochloride combination
The combination should not be used in horses with a pre-existing cardiac dysrhythmia or bradycardia. The combination will cause a reduction in gastrointestinal motility and consequently should not be used in cases of colic associated with impaction.
Due to a possible depressive effect on the respiratory system, the product is contraindicated for use in horses with emphysema.

See also section 3.7

3.4 Special warnings

Butorphanol is intended for use where short duration analgesia (dog, horse) is required. For information on the duration of analgesia that can be expected following treatment see section 4.2. However, repeat treatments of butorphanol may be administered. For cases where longer duration analgesia is likely to be required, an alternative therapeutic agent should be used.

In the cat, butorphanol is intended for use where short to medium duration analgesia is required. For information on the duration of analgesia that can be expected following treatment see section 4.2. Depending on the clinical response, product administration may be repeated within six hours. In the absence of an adequate analgesic response, use of an alternative analgesic agent, such as another suitable opioid analgesic and/or a non-steroidal anti-inflammatory drug, should be considered. Increasing of the dose may not increase the intensity or duration of analgesia. Any alternative analgesia should take account of the action of butorphanol on opioid receptors, as described in Section 3.8.

Mild sedation may occur in all species when the product is used as a sole agent.

3.5 Special precautions for use

Special precautions for safe use in the target species:

FOR ALL TARGET SPECIES

The safety of the product in puppies, kitten and foals has not been established. Use of the product in these groups should be on the basis of a benefit/risk analysis by the responsible veterinarian.

Due to its antitussive properties, butorphanol may lead to an accumulation of mucous in the respiratory tract. Therefore, in animals with respiratory diseases associated with increased mucous production, butorphanol should only be used after a risk-benefit evaluation by the responsible veterinarian.

Routine cardiac auscultation should be performed prior to use in combination with α2-adrenoceptor agonists. The combination of butorphanol and α2-adrenoceptor agonists should be used with caution in animals with cardiovascular disease. The concurrent use of anticholinergic drugs, e.g. atropine should be considered.

HORSES

The use of the product at the recommended dose may lead to transient ataxia and/or excitement. Therefore, to prevent injuries, in the patient and people when treating horses, the location for the treatment should be chosen carefully.

DOGS
When administering as an intravenous injection, do not inject rapidly as a bolus.
In dogs with MDR1 mutation reduce dose by 25-50%.

CATS
Cats should be weighed to ensure that the correct dose is calculated. Use of either insulin syringes or 1 ml graduated syringes is recommended.

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

Butorphanol has opioid activity.
The most frequent adverse effects of butorphanol in humans are drowsiness, sweating, nausea, dizziness and vertigo and these may occur following unintended self-injection. Care should be taken to avoid accidental injection/self-injection. If accidental self-injection occurs, seek medical advice immediately and show the package leaflet or the label to the physician. DO NOT DRIVE. An opioid antagonist (e.g. naloxone) may be used as an antidote

Wash splashes from skin and eyes immediately.

Special precautions for the protection of the environment:

Not applicable.

3.6 Adverse events

Horses, dogs, cats:

Very rare (<1 animal / 10,000 animals treated, including isolated reports):	injection site pain[1]

[1] On intramuscular injection.

Horses:

Very common (>1 animal / 10 animals treated):	ataxia[1,2]
Very rare (<1 animal / 10,000 animals treated, including isolated reports):	pacing[3] digestive tract disorder[4] cardiac depression[5] respiratory depression[5]

[1] Mild; may persist for 3 to 10 minutes.
[2] Mild to severe; may be encountered in combination with detomidine, but clinical studies have shown that horses are unlikely to collapse. Normal precautions should be observed to prevent self-injury.
[3] Excitatory locomotor effects.
[4] Adverse effects on gastrointestinal tract motility may occur, although there is no decrease in gastrointestinal transit time; these effects are dose-related and generally minor and transient.

[5] When used in combination with α2-adrenoceptor agonists; fatality may occur rarely.

Dogs:

Rare (1 to 10 animals / 10,000 animals treated):	diarrhoea ataxia[1] anorexia
Very rare (<1 animal / 10,000 animals treated, including isolated reports):	cardiac depression[2] respiratory depression[2] digestive tract disorder[3]

[1] Transient.
[2] As evidenced by a decrease in respiratory rate, development of bradycardia and a decrease in diastolic pressure may occur. The degree of depression is dose dependent.
[3] Reduction in gastrointestinal motility.

Cats:

Very rare (<1 animal / 10,000 animals treated, including isolated reports):	anxiety excitation disorientation mydriasis respiratory depression dysphoria

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 package leaflet for respective contact details.

3.7 Use during pregnancy, lactation or lay

Pregnancy and lactation:
The safety of this veterinary medicinal product has not been established in the target species during pregnancy and lactation. The use is not recommended during pregnancy and lactation.

3.8 Interaction with other medicinal products and other forms of interaction

When butorphanol is used in combination with certain α2-adrenoceptor agonists (romifidine or detomidine in horses, medetomidine in dogs and cats) synergistic effects occur requiring a butorphanol dose reduction (see section 3.9).
Butorphanol is antitussive and should not be used in combination with an expectorant as it may lead to an accumulation of mucous in the airways.
Butorphanol has antagonist properties at the opiate mu (μ) receptor which may remove the analgesic effect of pure opioid mu (μ) agonists (e.g., morphine/oxymorphine) in animals that have already received these agents.

The concomitant use of other central nervous depressants would be expected to potentiate the effects of butorphanol and such drugs should be used with caution. A reduced butorphanol dose should be used when administering these agents concurrently.

3.9 Administration routes and dosage

Horses: Intravenous use (IV).
Dogs and cats: Intravenous (IV), subcutaneous (SC) and intramuscular (IM) use.
To ensure a correct dosage, body weight should be determined as accurately as possible.
When administering as an intravenous injection, do no inject as a bolus.
If repeat SC or IM administrations are required, use different injection sites.
Rapid intravenous injection should be avoided.
Number of broachings should be limited to ≤ 40.
For information on the duration of analgesia that can be expected following treatment, see section 4.2.

HORSES

As an analgesic
Monotherapy:
0.1 mg/kg (1 ml/100 kg bw) IV. The dose may be repeated as required. Analgesic effects are seen within 15 minutes of injection.

As a sedative
With detomidine:
Detomidine hydrochloride: 0.012 mg/kg IV, followed within 5 minutes by
Butorphanol: 0.025 mg/kg IV.

With romifidine:
Romifidine: 0.04 - 0.12 mg/kg IV, followed within 5 minutes by
Butorphanol: 0.02 mg/kg IV.

DOGS

As an analgesic
Monotherapy:
0.2-0.3 mg/kg (0.02-0.03 ml/kg bw) IV, IM or SC injection.
Administer 15 minutes before terminating anaesthesia to provide analgesia in the recovery phase.
Repeat dose as required.

As a sedative
With medetomidine:
Butorphanol: 0.1 mg/kg (0.01 ml/kg bw) IV or IM
Medetomidine: 0.01-0.025 mg/kg IV or IM.
Allow 20 minutes for sedation to develop before commencing the procedure.

As a premedicant/pre-anaesthetic
For sedation and as a premedicant to barbiturate anaesthesia.
Butorphanol: 0.1 mg/kg (0.01 ml/kg bw) IV or IM
Medetomidine: 0.01 mg/kg IV or IM

As a pre-anaesthetic
Monotherapy for canine analgesia.
Butorphanol: 0.1-0.2 mg/kg (0.01-0.02 ml/kg bw) IV, IM or SC given 15 minutes prior to induction.

As an anaesthetic
In combination with medetomidine and ketamine:

Butorphanol: 0.1 mg/kg (0.01 ml/kg bw) IM
Medetomidine: 0.025 mg/kg IM, followed after 15 minutes by
Ketamine: 5 mg/kg IM.
It is not advisable to reverse this combination in the dog with atipamezole.

CATS

As an analgesic
Pre-operative:
Butorphanol: 0.4 mg/kg (0.04 ml/ kg bw) IM or SC
Administer 15-30 minutes prior to the administration of IV induction anaesthetic agents
Administer 5 minutes before induction with IM induction anaesthetic agents such as combinations of IM acepromazine/ketamine or xylazine/ketamine. See also section 4.2. for duration of analgesia.

Post-operative:
Administer 15 minutes before recovery:
either Butorphanol: 0.4 mg/kg (0.04 ml/kg bw) SC or IM
or: 0.1 mg/kg (0.01 ml/kg bw) IV

As a sedative
With medetomidine:
Butorphanol: 0.4 mg/kg (0.04 ml/ kg bw) IM or SC.
Medetomidine: 0.05 mg/kg SC.
Additional local anaesthesia should be used for wound suturing.

As an anaesthetic
In combination with medetomidine and ketamine:

IM administration:
Butorphanol: 0.4 mg/kg (0.04 ml/ kg bw) IM
Medetomidine: 0.08 mg/kg IM
Ketamine: 5 mg/kg IM.

IV administration:
Butorphanol: 0.1 mg/kg (0.01 ml/ kg bw) IV
Medetomidine: 0.04 mg/kg IV
Ketamine: 1.25-2.50 mg/kg IV (depending on depth of anaesthesia required).

3.10 Symptoms of overdose (and where applicable, emergency procedures and antidotes)

The most important result of overdosage is respiratory depression. This can be reversed with an opioid antagonist (e.g., naloxone).

Other possible signs of overdose in the horse include restlessness/excitability, muscle tremor, ataxia, hypersalivation, decrease of gastrointestinal motility and seizure. In the cat, the main signs of overdose are incoordination, salivation, and mild convulsions.

3.11 Special restrictions for use and special conditions for use, including restrictions on the use of antimicrobial and antiparasitic veterinary medicinal products in order to limit the risk of development of resistance

Not applicable.

3.12 Withdrawal periods

Horses:
Meat and offal: zero days.

Milk: zero hours.

4. PHARMACOLOGICAL INFORMATION

4.1 ATCvet code: QN02AF01.

4.2 Pharmacodynamics

Butorphanol tartrate (R(-) enantiomer) is a centrally acting analgesic. Its action is agonist-antagonist at the opiate receptors in the central nervous system; agonist at the kappa (κ) opioid receptor subtype and antagonist at the mu (μ) receptor subtype. The kappa (κ) receptors control analgesia, sedation without depression of cardiopulmonary system and body temperature, whereas the mu (μ) receptors control supraspinal analgesia, sedation and depression of cardiopulmonary system and body temperature. The agonist component of butorphanol activity is ten times more potent than the antagonist component.

Onset and duration of analgesia:
Analgesia generally occurs within 15 minutes following administration in horse, dog and cat. After a single intravenous dose in the horse, analgesia usually lasts for 15 – 60 minutes. In the dog, it lasts for 15-30 minutes after a single intravenous administration. In cats with visceral pain, analgesic effect for 15 minutes up to 6 hours after butorphanol administration has been demonstrated. In cats with somatic pain, the duration of analgesia has been considerably shorter.

4.3 Pharmacokinetics

In the horse, butorphanol has a high clearance (on average 1.3 L/h.kg) after intravenous administration. It has a short terminal half-life (mean <1 hour), indicating that 97% of a dose will be eliminated after intravenous administration in, on average, less than 5 hours.
In the dog, butorphanol administered by the intramuscular route has a high clearance (around 3.5 L/h.kg). It has a short terminal half-life (mean <2 hours), indicating that 97% of a dose will be eliminated after intramuscular administration in, on average, less than 10 hours. Repeated dose pharmacokinetics and the pharmacokinetics following intravenous administration have not been studied.
In the cat, butorphanol administered by the subcutaneous route has a low clearance (<1320 mL/kg.h). It has a relative long terminal half-life (around 6 hours) indicating that 97% of the dose will be eliminated in approximately 30 hours. Repeated dose pharmacokinetics have not been studied.
Butorphanol is metabolised extensively in the liver and excreted in the urine. The volume of distribution is large, suggesting wide distribution into tissue.

5. PHARMACEUTICAL PARTICULARS

5.1 Major incompatibilities

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

5.2 Shelf life

Shelf-life of the veterinary medicinal product as packaged for sale: 3 years.
Shelf-life after first opening the immediate packaging: 28 days.

5.3 Special precautions for storage

Keep the vial in the outer carton in order to protect from light.

5.4 Nature and composition of immediate packaging

Amber glass type I vials with a chlorobutyl stopper and aluminium over seal.

Pack sizes:
Cardboard box containing 1 vial of 10 ml.
Cardboard box containing 1 vial of 50 ml.

Not all pack sizes may be marketed.

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

Medicines should not be disposed of via wastewater or household waste.
Use take-back schemes for the disposal of any unused veterinary medicinal product or waste materials derived thereof in accordance with local requirements and with any national collection systems applicable to the veterinary medicinal product concerned.

6. NAME OF THE MARKETING AUTHORISATION HOLDER

Zoetis Belgium S.A.,

7. MARKETING AUTHORISATION NUMBER(S)

VPA10387/080/001

8. DATE OF FIRST AUTHORISATION

09/11/2012

9. DATE OF THE LAST REVISION OF THE SUMMARY OF THE PRODUCT CHARACTERISTICS

09/01/2025

10. CLASSIFICATION OF VETERINARY MEDICINAL PRODUCTS

Veterinary medicinal product subject to prescription.

Detailed information on this veterinary medicinal product is available in the Union Product Database (https://medicines.health.europa.eu/veterinary).