SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

Recudon 5 mg/ml + 0.25 mg/ml solution for injection for horses and dogs

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each ml contains:

Active substances:
4.4 mg Levomethadone equivalent to 5 mg levomethadone hydrochloride
0.22 mg Fenpipramide equivalent to 0.25 mg fenpipramide hydrochloride

Excipients:

Qualitative composition of excipients and other constituents	**Quantitative composition if that information is essential for proper administration of the veterinary medicinal product**
Methyl parahydroxybenzoate (E218)	1.0 mg
Sodium chloride	
Sodium hydroxide (for pH-adjustment)	
Hydrochloric acid (for pH-adjustment)	
Water for injection	

Clear colourless solution for injection, practically free from visible particles.

3. CLINICAL INFORMATION

3.1 Target species

Horses and dogs

3.2 Indications for use for each target species

Analgesia and premedication before procedures.

3.3 Contraindications

Do not use in animals with advanced respiratory failure.
Do not use in animals with severe liver or renal dysfunction.
Do not use in animals suffering from epileptic or strychnine seizures or tetanus
Do not use in cases of known hypersensitivity to any of the active substances or excipients.

3.4 Special warnings

Due to the variable individual response to levomethadone, animals should be monitored regularly to ensure sufficient efficacy for the desired duration of effect.
For methadone it has been described that Greyhounds may require higher doses than other breeds to achieve efficacious plasma levels. No corresponding information is available on the requirement for higher doses of specifically levomethadone in greyhounds, when compared to other breeds.

3.5 Special precautions for use

Special precautions for safe use in the target species
It is recommended that dogs are fasted for 12 hours prior to administration of the veterinary medicinal product. In dogs, this veterinary medicinal product should be injected very slowly when used intravenously. Restlessness and howling of the animals during the injection are signs of underdosing, so the injection should be continued.
Because the effects last for several hours, the animal should be protected from acoustic stimuli, and should be kept warm and dry until fully recovered.
Adequate oxygenation should be ensured during treatment, treated animals should be monitored regularly, including examination of heart rate and respiratory rate.
Use cautiously in animals with head injuries, as the effect of an opioid on head injury is dependent on the type and severity of the injury and the respiratory support supplied.
As methadone is metabolised by the liver, its intensity and duration of action may be affected in animals with impaired liver function.
In case of renal, cardiac or hepatic dysfunction, or shock, there may be greater risk associated with the use of the veterinary medicinal product.
It should be noted that antagonising the levomethadone component in the veterinary medicinal product can lead to an overhang by fenpipramide hydrochloride, which can lead to tachycardia, for more information see section 3.10 Symptoms of overdose.

Special precautions to be taken by the person administering the veterinary medicinal product to animals
Levomethadone is an opioid and can cause respiratory depression following accidental self-injection.
Prolonged dermal exposure may also cause adverse effects.
(Levo)Methadone may harm the unborn child. The veterinary medicinal product should not be administered by pregnant women.
Avoid skin, eye and mouth contact. In cases of spillage onto the skin, or splashing into the eyes, wash immediately with large amounts of water. Remove contaminated clothes.
People with known hypersensitivity to levomethadone and/or parabens should avoid contact with the veterinary medicinal product.
In case of accidental self-injection, seek medical advice immediately and show the package leaflet to the physician but DO NOT DRIVE as sedation may occur.

ADVICE TO DOCTORS: Levomethadone is an opioid whose toxicity may cause clinical effects including respiratory depression or apnoea, sedation, hypotension and coma. When respiratory depression occurs controlled ventilation should be initiated. Administration of the opioid antagonist naloxone to reverse the symptoms is recommended.

Special precautions for the protection of the environment:

Not applicable.

3.6 Adverse events

Dogs:

Frequency	Adverse event
Undetermined frequency (cannot be estimated from the available data)	Respiratory depression, Panting, Irregular breathing, Decreased body temperature, Bradycardia[1], Increased sensitivity to sound, Constipation, Vomiting.

Horses:

Frequency	Adverse event
Undetermined frequency (cannot be estimated from the available data)	Respiratory depression, Decreased body temperature, Bradycardia, Excitation[2], Constipation.

[1.] Only at high doses
[2] The presence or absence of pain influences the response to opioids. Horses in pain may show no adverse reactions to doses which would cause excitement in normal animals

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 section 'contact details' of the package leaflet for respective contact details.

3.7 Use during pregnancy, lactation or lay

Pregnancy:
Levomethadone penetrates the placental barrier and can lead to respiratory depression in new-borns. Studies in laboratory animals have shown adverse effects on reproduction. The safety of the veterinary medicinal product has not been established during pregnancy. Use only according to the benefit/risk assessment by the responsible veterinarian.

Lactation:
The safety of the veterinary medicinal product has not been established during lactation. Use only according to the benefit/risk assessment by the responsible veterinarian.

3.8 Interactions with other medicinal products and other forms of interaction

The veterinary medicinal product can potentiate the effects of analgesics, central nervous system inhibitors and substances that cause respiratory depression.
Concomitant or subsequent use of the veterinary medicinal product with buprenorphine may lead to lack of efficacy.
The effect of metoclopramide on accelerating gastric emptying is reduced.

3.9 Administration routes and dosage

The veterinary medicinal product is intended for:
- Horses: slow intravenous use
- Dogs: slow intravenous use

Horses
Analgesia
0.1-0.15 mg levomethadone-HCL / 0.005-0.0075 mg fenpipramide-HCL per kg bodyweight intravenously.
Corresponding to: Per 100 kg bodyweight: 2.0 -3.0 ml veterinary medicinal product.

Use for premedication in combination with xylazine, romifidine or detomidine
The lower end of this dose-range should be used when the veterinary medicinal product is used in combination with one of these substances. Assessment of the combination to be used should be done by the treating veterinarian based on the purpose of treatment and the physical characteristics of the individual patient. All anaesthetics used for induction or maintenance of anaesthesia should be administered guided by effect.

Dogs:
Analgesia
0.2-1.0 mg levomethadone-HCL / 0.01-0.05 mg fenpipramide-HCL per kg bodyweight intravenously.
Corresponding to: Per 10 kg bodyweight: 0.4-2.0 ml veterinary medicinal product.
Levomethadone is approximately twice as potent as the methadone racemate. The dosage should generally be half of the dose of methadone.
Doses higher than 0.5 mg levomethadone-HCL per kg should only be administered after thorough assessment of the severity of the pain, individual differences in pain sensitivity and the general condition of the dog. The total dose in dogs should not exceed 12.5 ml.

Use for premedication in combination with xylazine, medetomidine or dexmedetomidine
The lower end of this dose-range should be used when the veterinary medicinal product is used in combination with one of these substances. Assessment of the combination to be used should be done by the treating veterinarian based on the purpose of treatment and the physical characteristics of the individual patient. All anaesthetics used for induction or maintenance of anaesthesia should be administered guided by effect.

Before administration the body weight should be accurately determined. The vial can be broached up to 10 times. The user should choose the most appropriate vial size according to the target species to be treated.

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

Overdosage may produce profound respiratory and/or CNS depression.

Other side effects can include cardiovascular collapse, hypothermia, convulsions and skeletal muscle hypotonia. Horses may demonstrate CNS excitability (hyperreflexia, tremors) and seizures at high doses or if given rapidly intravenously.
Mechanical respiratory support should be considered in cases of severe respiratory depression.
Naloxone hydrochloride can be used as an antagonist for levomethadone. It should be noted that antagonising the levomethadone component in the veterinary medicinal product can lead to an overhang by fenpipramide hydrochloride, which can lead to tachycardia. Naloxone is the agent of choice in treating respiratory depression. In massive overdoses, naloxone doses may need to be repeated. Animals should be closely observed since naloxone's effects might diminish before sub-toxic levels of levomethadone are attained.

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

[For MRP/DCP/SRP and national procedures: To be completed in accordance with national requirements after conclusion of the MRP/DCP/SRP.]

3.12 Withdrawal periods

Meat and offal: 3 days
Milk: Not authorised for use in horses producing milk for human consumption.

4. PHARMACOLOGICAL INFORMATION

4.1 ATCvet code: QN02AC52.

4.2 Pharmacodynamics

Levomethadone is a lipophilic basic synthetic opioid analgesic. Levomethadone is the (-)-R-enantiomer of the racemic *dl*-methadone. The S(+)enantiomer has only 1/50 of the analgesic effect of the R(-) enantiomer, so that Levomethadone is approximately twice as potent as the methadone racemate and they can generally be safely replaced by each other on a 2:1 ratio
The sterical configuration of levomethadone resembles that of morphine.
Levomethadone acts by binding to the μ-opiate receptors. Its analgesic action is comparable to that of morphine, accompanied by sedation, euphoria, respiratory depression and miosis. Levomethadone analgesic duration of action (as with morphine) varies from 4 to 6 hours.
Other substance specific secondary effects include bradycardia, hypertension, constipation and antidiuresis and some effects (e.g. respiratory depression) may last longer than the analgesic effect. The pharmacological potency of levomethadone varies from species to species.

Fenpipramide is a parasympatholytic. By combining fenpipramide with levomethadone, the vagus effect of levomethadone is counteracted and thus the side effects of levomethadone are reduced: Spontaneous defecation, urination or excessive salivation are eliminated. Heart rate and pulse rates do not change. However, a decrease in temperature occurs, as well as slight respiratory depression.

With the veterinary medicinal product, a calm increase in the pain threshold is achieved. The effect appears relatively quickly when administered intravenously.
In dogs, the effect can be observed during a slow intravenous injection. The muscles gradually relax and the dogs falls asleep without excitation.
In horses, the veterinary medicinal product causes pronounced sedation and analgesia, but usually no general anaesthesia. The effect is rapid when injected intravenously and manifests in a sawbuck-like posture and upheld tail. Walking often becomes unsteady. Combination with neuroleptics or tranquillizers intensifies the sedative-analgesic effect, but does not achieve anaesthesia on its own.

4.3 Pharmacokinetics

Pharmacokinetic data in horses and dogs have been obtained mainly from studies using racemic methadone. Methadone is rapidly absorbed after subcutaneous, intramuscular and oral administration. Plasma protein binding is high and the volume of distribution is relatively large. High tissue concentrations are found in liver and lung followed by kidney and brain.
Methadone is extensively metabolised mainly in the liver to inactive metabolites. Levomethadone is excreted both in urine and faeces. The excretion pattern between bile and urine can vary according to dose, differences in liver and kidney function and pH of urine. The higher the dose, the more appears to be excreted via bile. Elimination half-life of levomethadone is approximately 2 hours in dogs and 1 hour in horses.
After intravenous administration fenpipramide decreases to very low levels within 24 hours and is excreted in urine and faeces.

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: 2 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
This veterinary medicinal product does not require any special temperature storage conditions.

5.4 Nature and composition of immediate packaging

Cardboard box with 1 clear glass (Type I) vial of 10 ml , 30 ml or 50 ml with a coated bromobutyl rubber stopper and aluminium cap.

Pack sizes:
5 ml (in a 10 ml sized vial)

10 ml
30 ml
50 ml

Not all pack sizes may be marketed.

5.5 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 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

Alfasan Nederland B.V.
Kuipersweg 9
3449 JA Woerden
The Netherlands

7. MARKETING AUTHORISATION NUMBER

Vm 36408/3018

8. DATE OF FIRST AUTHORISATION

21 July 2023

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

July 2023

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).

Approved 21 July 2023