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**DECENTRALISED PROCEDURE**

**PUBLICLY AVAILABLE ASSESSMENT REPORT FOR A VETERINARY MEDICINAL PRODUCT**

**CANIGEN Pi/L – CANIXIN Pi/L - VIRBAGEN CANIS Pi/L**

## MODULE 1

### PRODUCT SUMMARY

EU Procedure number	FR/V/0311/001/DC
Name, strength and pharmaceutical form	CANIGEN Pi/L Lyophilisate and suspension for suspension for injection, for dogs
Applicant	VIRBAC, France
Active substance(s)	Freeze-dried fraction : Attenuated Canine parainfluenza virus (CPiV) – Manhattan strain Suspension : Inactivated <i>Leptospira interrogans</i> serogroup Canicola serovar canicola, strain 601903 Inactivated <i>Leptospira interrogans</i> serogroup Icterohaemorrhagiae serovar icterohaemorrhagiae, strain 60189
ATC Vetcode	QI07AI08
Target species	dogs
Indication for use	For active immunisation of dogs from 8 weeks of age to: <ul style="list-style-type: none"> <li>- reduce respiratory clinical signs and viral excretion caused by canine parainfluenza virus</li> <li>- prevent mortality and reduce infection, clinical signs, kidney colonisation, renal lesions and urine shedding of <i>Leptospira Canicola</i></li> <li>- reduce infection, clinical signs, kidney colonisation and urine shedding of <i>Leptospira Icterohaemorrhagiae</i></li> </ul>

## **MODULE 2**

The Summary of Product Characteristics (SPC) for this product is available on the website <http://www.ircp.anmv.anses.fr/>

## MODULE 3

### PUBLIC ASSESSMENT REPORT

Legal basis of original application	Decentralised application in accordance with Article of Directive 2001/82/EC as amended.
Date of completion of the original decentralised procedure	25/01/2017
Date product first authorised in the Reference Member State (MRP only)	
Concerned Member States for original procedure	AT, BE, BG, CY, CZ, DE, DK, EE, EL, ES, FI, HR, HU, IE, IT, LT, LU, LV, NL, NO, PL, PT, RO, SE, SI, SK and UK

#### I. SCIENTIFIC OVERVIEW

the vaccine is a non-adjuvanted vaccine against canine parainfluenza virus (respiratory disease) and leptospirosis. The product consists of combination of a lyophilisate fraction (containing the live attenuated canine parainfluenza virus) to be reconstituted with the liquid fraction (containing the inactivated *Leptospira* antigens). The vaccine is recommended for puppies from 8 weeks of age as 2 injections by the SC route at an interval of 3-4 weeks. An annual single booster is also recommended.

This vaccine is included in the applicant's canine vaccine range and is included in the applicant's program aiming to have harmonized European authorisations for its canine vaccines.

The product is produced and controlled using validated methods and tests, which ensure the consistency of the product released on the market.

It has been shown that the product can be safely used in the target species. Some minor transient reactions were commonly observed (local swellings or weakness). Hyperthermia, local pain or digestive signs were reported in rare cases. All those signs resolved and disappeared spontaneously within few days and without any additional treatment. These reactions have been described in the SPC and are regarded as acceptable post-vaccination reactions for a canine vaccine.

The product is safe for the user, and for the environment, when used as recommended. Suitable warnings and precautions are indicated in the SPC.

The efficacy of the product was demonstrated according to the claims made in the SPC.

The overall benefit-risk analysis is in favour of granting a marketing authorisation.

## II. QUALITY ASPECTS

### A. Composition

The product is constituted of a freeze-dried fraction containing the following live attenuated active ingredient:

Ingredients	Quantity per dose
Attenuated canine parainfluenza virus, Manhattan strain	$10^{4.8}$ to $10^{6.9}$ CCID <sub>50</sub> *

\* cell culture infectious dose 50%

This fraction is to be reconstituted with the liquid fraction containing the following inactivated ingredients:

ingredients	Quantity per dose
Leptospira canicola	conferring $\geq 80\%$ protection*
Leptospira icterohaemorrhagiae	conferring $\geq 80\%$ protection*

\* According to Ph. Eur. monograph 447, hamster potency test

The 2 fractions are filled in 3 ml insulin type flasks made of neutral borosilicate type 1 glass closed with a butyl elastomer stopper. The particulars of the containers and controls performed are provided and conform to regulation.

The choice of the vaccine strains, the production process and the formulation are justified.

The inactivation process and the detection limit of the control of inactivation are correctly validated.

### B. Method of Preparation of the Product

The product is manufactured fully in accordance with the principles of good manufacturing practice from a licensed manufacturing site.

The product is manufactured in accordance with the European Pharmacopoeia and relevant European guidelines.

### C. Control of Starting Materials

The active substances (canine parainfluenza virus, *Leptospira Canicola* & *Leptospira Icterohaemorrhagiae*) are established active substances described in the European Pharmacopoeia. The active substances are manufactured in accordance with the principles of good manufacturing practice.

The master and working seeds have been produced according to the Seed Lot System as described in the relevant guideline. The active substance specifications are considered adequate to control the quality of the material. Analytical batch data demonstrating compliance with these specifications have been provided.

Starting materials of non-biological origin used in production comply with relevant European pharmacopoeia monographs where these exist, or in-house specifications.

Biological starting materials used are in compliance with the relevant Ph. Eur. Monographs and guidelines and are appropriately screened for the absence of extraneous agents; any deviation was adequately justified.

***Specific Measures concerning the Prevention of the Transmission of Animal Spongiform Encephalopathies***

Scientific data and/or certificates of suitability issued by the EDQM have been provided and compliance with the Note for Guidance on Minimising the Risk of Transmitting Animal Spongiform Encephalopathy Agents via Human and Veterinary Medicinal Products has been satisfactorily demonstrated.

***D. Control tests during production***

The tests performed during production are described and the results of 3 consecutive runs, conforming to the specifications, are provided.

***E. Control Tests on the Finished Product***

The tests performed on the final product conform to the relevant requirements; any deviation from these requirements is justified. The tests include in particular:

- Physicochemical tests,
- Identification and assay of the active ingredient
- Bacterial, fungal and mycoplasmic sterility according to Ph. Eur.
- Viral purity
- Residual humidity (lyophilised fraction)
- Control of inactivation (liquid fraction)

***F. Batch to batch consistency***

The demonstration of the batch to batch consistency is based on the results of 3 batches produced according to the method described in the dossier. Other supportive data provided confirm the consistency of the production process.

***G. Stability***

Stability data have been provided in accordance with applicable European guidelines, demonstrating the stability of the freeze-dried fraction and the liquid fraction (24 months) when stored under the approved conditions (2-8°C).

The vaccine must be used immediately after reconstitution.

### **III. SAFETY ASSESSMENT**

Vaccine batches used in the following studies are representative of the production process. For the parainfluenza component, vaccine batches contain the maximal claimed titre. Most of the studies have been conducted using a multivalent vaccine of the same canine vaccine range.

#### ***Laboratory trials***

Safety of the vaccine is supported by investigations conducted in laboratory studies (3 and 4 repeated administrations of multivalent vaccine in groups of 10 puppies – 20 vaccinated puppies). The investigation was performed according to the recommendations of Directive 2001/82/EC as amended, the relevant guidelines and according to the relevant European Pharmacopoeia monographs when applicable.

Transient mild local reactions after vaccination have been observed in most of the vaccinated dogs. These reactions have been adequately described in the SPC and package leaflet.

In the absence of any demonstration data, it is recommended not to use the vaccine during pregnancy or lactation.

For canine parainfluenza virus, Manhattan strain, specific studies were carried out to describe the spread, dissemination, reversion to virulence, biological properties, recombination or genetic reassortment of the vaccine strain. The vaccine strain was shown not to spread from vaccinated animals to in-contact animals.

The excipients used are in annex II of MRL regulation and live components are not associated to zoonotic disease. Based on this information, no withdrawal period is proposed.

#### ***Field studies***

Safety of the vaccine was confirmed in field situation where 26 puppies aged 8 weeks from 6 veterinary clinics were vaccinated as recommended. In addition, pharmacovigilance data available for this vaccine or multivalent vaccines of the same applicant's canine vaccine range which are authorised for years in many European countries support the safety of this vaccine.

Most of the vaccinated dogs presented transient mild local reactions. In very rare cases, general post vaccine reactions could be observed in vaccinated dogs, including hyperthermia, limited and brief digestive signs such as vomiting, diarrhoea or signs of lethargy. All these reactions resolve spontaneously within few days and are regarded as not uncommon and acceptable post-vaccination reactions for a canine vaccine. They are adequately described in the SPC.

### **Ecotoxicity**

The applicant provided a first phase environmental risk assessment in compliance with the relevant guideline which showed that no further assessment is required.

Warnings and precautions as listed on the product literature are adequate to ensure safety to the environment when the product is used as directed.

## **IV. CLINICAL ASSESSMENT (EFFICACY)**

### **Laboratory Trials**

The efficacy of the product has been demonstrated in laboratory studies in accordance with the relevant requirements which show the efficacy of the vaccine with regard to the claims. Vaccines used in these studies were formulated to contain minimal claimed titres for canine parainfluenza virus. Most of the studies were conducted using a multivalent vaccine of the same canine vaccine range.

Efficacy of the vaccine against canine parainfluenza virus (reduction of clinical signs and reduction of viral excretion) is established in conformity with the European Pharmacopoeia (monograph 1955) in a clinical study including challenge performed 4 weeks after vaccination (5 vaccinated puppies & 5 controls). Duration of immunity has been established through a challenge protection study conducted one year after vaccination in 10 vaccinated dogs. Significant reduction of clinical signs has been demonstrated and not significant effect on viral excretion could be established.

Efficacy of the vaccine against *Leptospira Canicola* and *Leptospira Icterohaemorrhagiae* (prevention of mortality, reduction of infection, clinical signs, kidney colonisation, renal lesions and urine shedding) is established in clinical studies including challenge performed 5 weeks after vaccination for *Leptospira Canicola* (12 vaccinated dogs – 12 controls) and 2 weeks after vaccination for *Leptospira Icterohaemorrhagiae* (6 vaccinated dogs – 6 controls). In these studies, prevention of mortality, reduction of infection, clinical signs, kidney colonisation, renal lesions and urine shedding has been established for *L. Canicola* and reduction of infection, clinical signs, kidney colonisation and urine shedding was established for *L. Icterohaemorrhagiae*.

Duration of immunity has been established through challenge protection study conducted one year after vaccination including for each serovar 6 vaccinated and 6 controls dogs. In these studies there was no significant difference between

vaccinated and control dogs in reduction of kidney colonisation for *L. Canicola* and *L. Icterohaemorrhagiae* nor in renal lesions and urine shedding for *L. Canicola*.

### ***Field Trials***

Laboratory studies are completed by field studies relying on observation of the serological response after vaccination of 62 puppies of minimal age, various breeds and from 6 veterinary clinics. Supportive pharmacovigilance data are also provided as this vaccine and multivalent vaccine of the same canine vaccine range which are authorised for years in many European countries.

## **V. OVERALL CONCLUSION AND BENEFIT– RISK ASSESSMENT**

The data submitted in the dossier demonstrate that when the product is used in accordance with the Summary of Product Characteristics, the benefit-risk profile for the target species is favourable and the quality and safety of the product for humans and the environment is acceptable.

## **MODULE 4**

### **POST-AUTHORISATION ASSESSMENTS**

The SPC and package leaflet may be updated to include new information on the quality, safety and efficacy of the veterinary medicinal product. The current SPC is available on the veterinary Heads of Agencies website (<http://www.hma.eu/vmriproductindex.html>).

This section contains information on significant changes which have been made after the original procedure which are important for the quality, safety or efficacy of the product.

<None>