

CERTIFICATE OF ANALYSIS

Product: **Biocan Novel DHPPi/L4R, liofilizat si diluant pentru suspensie injectabilă**

Batch No.: **415530**
Expiry: **12/2024**
Date of production: **17.1.2023**

Results of analysis:

Tests	Release limits		Shelf-life limits	Results
Freeze-dried fraction				
Appearance	Spongy matter, white colour.			conforms
Residual humidity	0.5 - 3 %			0.5 %
Vacuum	Residual pressure must be lower than 2.66 Pa.			conforms
Sterility	Vaccine must be sterile.			sterile
Mycoplasma	Vaccine must be free from <i>mycoplasma</i> .			conforms
Extraneous agents	Free from extraneous agents.			conforms
Virus titre	Function: To determine the virus titre (potency) of each CAV-2, CDV, CPiV-2 and CPV-2b antigen in the finished product.			conforms
CDV	min. 10 ^{4.0} TCID ₅₀ -max. 10 ^{5.1} TCID ₅₀	min. 10 ^{3.1} TCID ₅₀ - max. 10 ^{5.1} TCID ₅₀		10 ^{4.1} TCID ₅₀
CPV	min. 10 ^{5.1} TCID ₅₀ - max. 10 ^{6.6} TCID ₅₀	min. 10 ^{4.3} TCID ₅₀ - max. 10 ^{6.6} TCID ₅₀		10 ^{5.3} TCID ₅₀
CAV-2	min. 10 ^{4.2} TCID ₅₀ - max. 10 ^{5.3} TCID ₅₀	min. 10 ^{3.6} TCID ₅₀ - max. 10 ^{5.3} TCID ₅₀		10 ^{4.3} TCID ₅₀
CPiV-2	min. 10 ^{3.6} TCID ₅₀ - max. 10 ^{5.1} TCID ₅₀	min. 10 ^{3.1} TCID ₅₀ - max. 10 ^{5.1} TCID ₅₀		10 ^{4.8} TCID ₅₀
Identity	Function: The test is performed to confirm presence of each CAV-2, CDV, CPiV-2 and CPV antigen in the finished product.			conforms
CDV	Neutralization index has to be equal or higher than 2 log ₁₀ and/or specific immunofluorescence has to be seen in the cell culture infected with CDV.			4.1
CAV-2	Neutralization index has to be equal or higher than 2 log ₁₀ and/or specific immunofluorescence has to be seen in the cell culture infected with CAV-2.			4.3
CPV-2b	The CPV type must be CPV 2a, b, c group.			conforms
CPiV-2	Neutralization index has to be equal or higher than 2 log ₁₀ and/or specific immunofluorescence has to be seen in the cell culture infected with CPiV.			4.8
Liquid fraction				
Appearance	Pink liquid with easily shakeable sediment.			conforms
Extractable volume	Minimum 1 ml			1.1 ml
Airtightness	The glass vial must be hermetically sealed.			conforms
Aluminium content *	2 mg/ml (1.8 – 2.2 mg/ml)			2.014 mg/ml
Sterility	Vaccine must be sterile.			sterile
<i>Leptospira</i> inactivation *	No live <i>Leptospira</i> .			conforms
Rabies inactivation *	No live rabies virus must be detected.			conforms
<i>Leptospira</i> identity	Vaccine stimulates the production of specific antibodies against each <i>Leptospira</i> serovar.			conforms
<i>Leptospira</i> potency	Minimum of 1:64 ALR geometric mean titre, for each <i>Leptospira</i> serovar.	Minimum of 1:51 ALR geometric mean titre for <i>L. Icterohaemorrhagiae</i> .	1: 72	
		Minimum of 1:51 ALR geometric mean titre for <i>L. Canicola</i> .	1: 72	
		Minimum of 1:51 ALR geometric mean titre for <i>L. Bratislava</i> .	1: 81	
		Minimum of 1:40 ALR geometric mean titre for <i>L. Grippotyphosa</i> .	1: 362	
Rabies identity / potency (serology in mice)	The vaccine stimulates the production of specific neutralizing antibodies. The serology response after vaccination has to be significantly higher in comparison to a serology response of standard 2 IU vaccine.			conforms
Reconstituted Vaccine				
Appearance	Pink-red or yellowish colour with light opalescence.			conforms
pH	6.8 – 7.8			7.7

* tests carried out during manufacturing proces of liquid fraction

I certify that this product has been tested in the laboratories of Bioveta a.s. and has been found to meet specification requirements. Preparation is suitable with control regulations of the valid PN No. 464,V002.

.....08/09/2023
Mgr. Hana Nezvalová
HEAD of QC, QP

