

CERTIFICATE OF ANALYSIS

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

Batch No.: **64 57 26**

Expiry: **28.02.2021**

Date of production: **01.03.2019**

Results of analysis:

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Tests	Release limits	Shelf-life limits	Results
Freeze-dried fraction			
Appearance	Spongy matter, white colour.		
Residual humidity	0.5 - 3 %		conforms
Vacuum	Residual pressure must be lower than 2.66 Pa.		1.0 %
Sterility	Vaccine must be sterile.		conforms
Mycoplasma	Vaccine must be free from <i>mycoplasma</i> .		sterile
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 ^{5.8} 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 ^{4.8} 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 ^{3.6} 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.		4.8
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.		3.6
Liquid fraction			
Appearance	Pink liquid with easily shakeable sediment.		
Extractable volume	Minimum 1 ml		conforms
Airtightness	The glass vial must be hermetically sealed.		1.1 ml
Aluminium content *	2 mg/ml (1.8 – 2.2 mg/ml)		conforms
Sterility	Vaccine must be sterile.		2.001 mg/ml
<i>Leptospira</i> inactivation *	No live <i>Leptospira</i> .		sterile
Rabies inactivation *	No live rabies virus must be detected.		conforms
Formaldehyde detection *	The formaldehyde detected has to be below 0.01%.		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: 81
		Minimum of 1:51 ALR geometric mean titre for <i>L. Bratislava</i> .	1:72
		Minimum of 1:40 ALR geometric mean titre for <i>L. Grippotyphosa</i> .	1: 91
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.		
pH	6.8 – 7.8		conforms
			7.7

* tests carried out during manufacturing process of liquid fraction

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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.

02/09/2019
Mgr. Hana Nezvalová
HEAD of QC, QP