

**CNEVA**

CENTRE NATIONAL D'ETUDES VETERINAIRES ET ALIMENTAIRES

FOUGERES, le 15 JUIN 1989

LABORATOIRE  
DES MEDICAMENTS VETERINAIRES

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**ANALYSIS RESULTS**

**Recipient:**

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**Subject:**

Study of virucidal activity of TH4+

- Laboratory that realised the tests  
CNEVA – Laboratoires des Médicaments Vétérinaires, 35133 Fougères – Research Unit “Antiseptiques et Désinfection”  
Responsible: P. MARIS – Doctor of Pharmacy
- Product: arrived on May 31<sup>st</sup> 1988  
Identified: Study n°31  
Kept at room temperature in the dark.
- Composition: quaternary ammonium and glutaraldehyde association
- Analysis period: January to April 1989
- Product diluent: without any specification of the manufacturer, we used sterile distilled water
- Study method:  
Application of AFNOR T 72-180 (edition 1986) methodology on the following virus:
  - Bovine coronavirus (origin: “Laboratoire de Pathologie Bovine – Lyon” [Bovine Pathology Laboratory]) produced and titrated on Vero cell line
  - Poliovirus type 1 Sabin strain, produced and titrated on Vero cell line
  - Bovine rotavirus (RF 28 strain – Thiverval Grignon), produced and titrated on MA 104 cell line
  - Avian reovirus (81003 strain – “Laboratoire de Pathologie Aviaire – Ploufargan” [Avian Pathology Laboratory] ), produced and titrated on MA 104 cell line
  - Canine parvovirus (Carmichael strain), produced and titrated on C.R.F.K. cell line.

Titre is determined for the coronavirus and the poliovirus by direct cytopathic effect; for rotavirus and reovirus, it is determined by plaque technique and for parvovirus by its haemagglutination towards porcine erythrocytes.
- Time and temperature:  
Contact time: 30 minutes at 20°C.

## **RESULTS**

### **1. Preliminary tests**

Strains	Tests Concentration (V/V)	Non-cytotoxic dilution	Reference titre*	Control* of activity stop	Reference titre*	Cell ability* to multiply viral infection
Bovine Coronavirus	0.05%	Filtration on gel	6.55	6.67	6.37	6.37
Bovine Poliovirus	2%	Filtration + 1/10 dilution	8.42	8.25	8.20	8.29
Bovine Rotavirus	0.5%	10 – 2	7.5	7.5	7.5	7.48
Avian Reovirus	0.2%	10 – 2	7.3	7.31	7.3	7.14
Canine Parvovirus	3%	Filtration + 1/10 dilution	5.2	4.6	4.9	4.9

\*: All the titres are expressed in decimal logarithm of D.C.P. 50/ml.

In such conditions, the preliminary tests are conform.

### **2. Final tests**

Strains	Reference titre*	Tests concentration (% - V/V)				
		1	0.1	0.05	0.02	0.01
Bovine Coronavirus	6.4	< 4.6	< 1.94	< 2.04	4.3	5.97
		5	2	1	0.5	0.1
Bovine Poliovirus	8.4	< 5.6	< 2.7	< 2.7	5.9	8.2
		1	0.5	0.2	0.1	0.01
Bovine Rotavirus	7.7	< 2.8	< 2.8	< 2.7	4.46	6.4
		0.5	0.2	0.1	0.05	0.01
Avian Reovirus	7.3	< 2.7	< 1.7	< 1.7	5.7	7.2
		3	2	1		
Canine Parvovirus	4.5	< 1.6	< 1.6	3.4		

\*: All the titres are expressed in decimal logarithm of D.C.P. 50/ml

## CONCLUSION

In the described conditions, the virucidal concentrations adopted are the ones that give a minimal decrease of the reference titre of 4 log 10.

- Bovine Coronavirus:..... 0.05%
  - Sabin type 1 Poliovirus:..... 1%
  - Bovine Rotavirus:..... 0.02%
  - Avian Reovirus: ..... 0.1%
  - Canine parvovirus:..... 2%
- (Decrease of 3 log 10)