



CODA - CERVA

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Avian virology and Immunology

Concern Tests made on the influenza A Respi-Strip from Coris BioConcept Belgium (ref C-1010 Batch number 1A10A0730).

The following strains have been tested with the Influenza Respi-strip form Coris BioConcept (rue Jean Sonet 4A, B-5032 Gembloux, Belgium): 2 highly pathogenic strains (H5N1 strain, A/crested_eagle/Belgium/01/04 and H7N7 strain, A/Ck/Belgium/O6600/03) and 4 low pathogenic strains (H3N1 strain, A/ck/Belgium/02216/06; H5N2 strain, A/ck/Belgium/150VB/99; H9N2 strain, A/ck/Belgium/150VB/83; H11N9 strain, A/duck/Belgium/1266/07).

Strains were isolated in the laboratory and amplified in day-9 to day-10 embryonated SPF eggs. Positive allantoïc fluids were ten-fold diluted in Phosphate Buffer Saline to obtain different concentrations of viruses.

The Influenza A Respi-Strip form Coris Bioconcept was able to detect the two highly pathogenic avian strains tested in this study H5N1 and H7N7 at the virus titre of 10^6 TCID₅₀/ml (0.7 10^6 equivalent pfu/ml).

The 4 low pathogenic avian influenza strains H3N1, H5N2, H9N2 and H11N9 were equally detected at a virus titre of 10^6 EID₅₀/ml (0.7 10^6 equivalent pfu/ml).

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Objectives: estimate the detection limits of Influenza A respi strip from Coris Bioconcept with different avian influenza strains:

- ❖ 2 highly pathogenic strains:
 - H5N1 strain, A/crested_eagle/Belgium/01/04
 - H7N7 strain, A/Ck/Belgium/06600/03
- ❖ 4 low pathogenic strains
 - H3N1 strain, A/ck/Belgium/02216/06
 - H5N2 strain, A/ck/Belgium/150VB/99
 - H9N2 strain, A/ck/Belgium/150VB/83
 - H11N9 strain, A/duck/Belgium/1266/07

Materials and methods

Avian influenza strains

Strains were isolated in the laboratory and amplified in day-9 to day-10 embryonated SPF eggs. Positive allantoic fluids containing avian influenza virus were collected and conserved at -80°C .

Procedure

- ❖ Positive allantoic fluids were ten-fold diluted in Phosphate Buffer Saline to obtain different concentrations of viruses. Various dilutions were independently repeated.
- ❖ 0.250 ml of diluted virus was mixed with 0.250 ml of the dilution buffer, and stirred thoroughly to homogenize the solution.
- ❖ The sensitized strip was immersed in the direction indicated by the arrows.
- ❖ The reaction was read after 15 minutes.
- ❖ Results were read on wet strip

Interpretation of the test

Negative result: presence of only one line (upper one).

Positive result: presence of two lines.

A weak signal on the test line was regarded as a positive result.

Results

Avian influenza strain	Virus concentration		
	10⁷ TCID₅₀/ml (0.7 10⁷ pfu/ml)	10⁶ TCID₅₀/ml (0.7 10⁶ pfu/ml)	10⁵ TCID₅₀/ml (0.7 10⁵ pfu/ml)
H5N1	10/10*	7/10	0/10
H7N7	10/10	9/10	0/10
	10⁷ EID₅₀/ml	10⁶ EID₅₀/ml	10⁵ EID₅₀/ml
LP H3N1	3/3	3/3	0/3
LP H5N2	3/3	3/3	0/3
LP H9N2	3/3	3/3	0/3
LP H11N9	3/3	3/3	0/3

* : number of positive results/number of total independent repetitions

TCID₅₀/ml: tissue culture infective dose 50/ml

EID₅₀/ml: 50% egg infective dose 50/ml

Pfu/ml: plaque forming unit/ml

Conclusion

From these data, we can conclude that the Influenza A respi strip from Coris Bioconcept was able to detect the two highly pathogenic avian strains tested in this study (H5N1 and H7N7) at the virus titre of 10⁶ TCID₅₀/ml (0.7 10⁶ equivalent pfu/ml). The 4 low pathogenic avian influenza strains were equally detected at a virus titre of 10⁶ EID₅₀/ml.