Rockeby Avian Influenza Virus Antigen Test

The **Rockeby avian influenza virus antigen test** kit is a rapid one step, chromatographic immunoassay for the qualitative detection of avian influenza virus antigen type A in avian faeces.

The Rockeby avian influenza virus antigen test kit, has been developed, as a veterinary diagnostic for on-site testing, for primary diagnosis with ease of use, quick results and could be used directly in the field without elaborate facilities. The kit has been coated with monoclonal antibody against nucleoprotein of influenza virus type A. This has been found to identify influenza virus with a high degree of accuracy. The kit contains test devices, specimen tubes containing assay diluent, sample collection swabs and disposable droppers sufficient to test 20 samples.

Features:

- Rapid Test Device
- Sandwich principle assay
- Sample type: cloacal swab, avian faeces, allantoic samples.
- Results in 10 minutes
- Kits can be stored between 2-30°C
- OIE listed kit

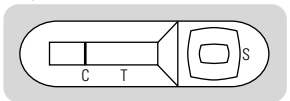
The avian flu, or the so-called "bird flu", is an infectious disease of birds caused by type A strains of the avian influenza virus (H5N1). All birds are thought to be susceptible to infection with avian influenza, though some fowl are more resistant to infection than others. Water foul act as a reservoir of the avian influenza virus by carrying the virus in their intestinal tract and shedding it in their fowl faeces, the virus causes no obvious disease in water foul but can be highly pathogenic in domestic poultry. The virus is spread to domestic poultry through respiratory secretion and from contact with the faeces of infected birds.

Current laboratory diagnostic methods are based on embryonated egg inoculation, followed by heamagglutination and subtyping with standard serum (OIE, 2000, Swayne et al. 1998) or PCR. The whole process is time consuming, costly, and requires classified laboratories and experienced technicians. Consequently, the conventional method may not be convenient for screening in the field.

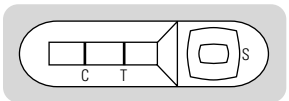
Assay Procedure:

1. Take a portion of fresh faeces from a stool sample or from cloacal area with the sample collection swab.
2. Insert the swab into the specimen tube containing assay diluent.
3. Mix the swab until the sample has been dissolved into the assay diluent.
4. Leave the test tube until the large particles have settled down to the bottom of the tube.
5. Remove the test device from the foil pouch, and place it on a flat and dry surface.
6. Using the disposable dropper provided, take the supernatant from extracted sample in the tube.
7. Add eight drops into the sample hole with disposable dropper.
8. Interpret test results at 10 minutes.

Negative Result:



Positive Result:



Marketed by:
Rockeby biomed (Singapore) Pte Ltd
350 Orchard Road, #21-01/03 Shaw House, Singapore 238868
Tel : (65) 6735-2368 Fax : (65) 6720-0687 Email : enquiries@rockeby.com

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Sensitivity / Specificity:

Table 1 provides the results of a study in Thailand on twenty five healthy and eighteen sick chickens confirmed by HA after egg inoculation. The samples were assayed according to the instruction manual within the kit.

Table 1: indicates the sensitivity and specificity of Rockeby Avian Influenza Type A kit.[6]

	Positive	Negative	Total
Positive	18	0	18
Negative	0	25	25
Total	18	25	43

Results of another study in Indonesia on 10 cloaca swab and faeces samples from various avian species in Indramayu found that the Rockeby Kit was able to detect all ten positive samples (10/10).

Influenza A Subtype Reactivity[6]

Test site	Subtype	Results
Singapore	H3N8	Positive
	H6N1	Positive
	H7N1	Positive
	H9N2	Positive
	H5N2	Positive
	H5N3	Positive
	H1N1	Positive
Thailand	H5N1	Positive
	H5N1	Positive
Indonesia	H5N1	Positive
	H5N2	Positive
	H5N3	Positive
	H5N9	Positive
	H7N3	Positive
	H7N7	Positive

Influenza B and non-Influenza Reactivity[6]

Test site	Other avian virus	Results
Singapore	Influenza B	Negative
	Paramyxovirus Type 2	Negative
	Newcastle Disease	Negative
Indonesia	Newcastle Disease	Negative
	Infectious Bronchitis	Negative
	Infectious laryngotracheitis	Negative
	Egg Drop Syndrome	Negative
	Infectious Bursal disease	Negative

Comparative Performance:

Table 2: Results of Rockeby Avian Influenza Type A kit against HA and RT-PCR at different concentrations of virus.[6]

Virus Level	C25SL02P3			C17Dx01P3		
(ELD50/ml)	Rockeby	HA	RT-PCR	Rockeby	HA	RT-PCR
10^9	2+	128	+	2+	128	*
10^8	2+	64	+	2+	16	*
10^7	2+	8	+	2+	1	+
10^6	-	<1	+	-	<1	+
10^5	-	<1	-	-	<1	+
10^4	-	<1	-	-	<1	+

** Not done*

Bibliography :

1. OIE. 2000. Highly pathogenic avian influenza In: Manual of standards for diagnostic tests and vaccines, 4th ed.
2. Perkin LEL. and Swayne DE. 2003. Comparative Susceptibility of selected avian and mammalian species to a Hong Kong-origin H5N1 high-pathogenicity avian influenza virus. Avian Disease 47:956-967.
3. Swayne DE., Senne DA. and Beard CW. 1998. Influenza In: Isolation and identification of avian pathogens, 4th ed. AAAP, Pennsylvania, USA, 150-155.
4. Swayne DE. and Halvorson DA. 2003. Influenza In: Diseases of poultry. 11th ed. Iowa State Press, Iowa, USA.
5. Webster RG. 1997. Predictions for future human influenza pandemics. Journal of Infectious Disease 176 (supp. 1): 14-19.
6. Rockeby biomed confidential data on file.