

What is an FTA card?

An FTA card is a chemically treated filter paper designed for the collection, preservation and shipment of biological samples for subsequent DNA and RNA analysis. Special chemicals lyse and inactivate bacteria and viruses and preserve their DNA and RNA for detection by PCR. Samples on FTA cards can be used for molecular genetics to identify and analyze specific chicken DNA segments, and for diagnostic purposes to detect DNA or RNA from pathogenic bacteria or viruses.

What are the uses of FTA cards?

- FTA cards are used to confirm the presence of a disease/etiologic agent and allow the appropriate diagnosis and treatment.
- Samples can be used for Polymerase Chain Reaction (PCR) testing, Real-time Polymerase Chain Reaction (RT-PCR) testing, and genetic sequencing allowing the rapid identification of suspected poultry diseases. Samples are in a format that is easy to use, store and ship to a laboratory.
- There is no need for the use of phenol (a fixative used to preserve samples) or refrigeration, and there is no risk of contamination.

Samples that can be taken with FTA cards

- Blood
- Cell Culture
- Allantoic fluid
- **Tissue impression or scrapings**
- Tissue swabs
- Bacterial culture solution

Important notes when taking FTA samples

- Use fresh tissues for sampling and avoid using dead birds found in the pen when possible, as nucleic acid quality compromised.
- Use ethanol to disinfect handling equipment between samples.
- Clearly level the card/and or application circles with the identity of the sample.
- Use only a pencil to write on FTA cards as ink from a pen may run, possible contaminating the sample.

Equipment needed for sampling

- Scissors, Scalpel, Forceps, Gloves, Sterile swabs in individual containers, FTA card, Pencil for identifying sample and Syringe for liquid sample.

Steps for making a tissue impression smear on an FTA card

- Step 1** Cut the organ open so that either the mucosa or the internal tissue is exposed then cut a small piece (5 mm³) of tissue to make the impression smear.
- Step 2** Using a scalpel and forceps, cut a sample of tissue and make a generous impression on the FTA card by pressing and rubbing the cut tissue onto the FTA card by using a finger.
- Step 3** Remove the cut tissue from the card, leaving behind the impression.
- Step 4** Let the impression air dry on the card for at least 30 minutes, keeping the card away from extreme heat, humidity or direct sunlight. After the sample has completely dried, place in a sealed plastic bag for transport.
- Step 5** Up to four samples can be applied on one FTA card. Samples placed on the same card should not be allowed to mix to prevent cross contamination of the individual samples.



Step 1



Step 2, 3



Step 4, 5

Sending FTA cards to the laboratory

Finally collected tissue samples from the field by using FTA cards send to the renowned laboratories in **Vienna, Austria** for PCR testing, RT-PCR testing, and genetic sequencing allowing the rapid identification of important poultry diseases (Bacterial and Viral diseases).

Suspected diseases and recommended samples to confirm diagnosis

Suspected Disease	Recommended Samples
Infectious Bronchitis (IB)	Tracheal scraping / impressions Kidney impressions and tracheal scraping (renal) Cecal tonsils impressions Allantoic fluid
Infectious Laryngotracheitis (ILT)	Tracheal and eyelid scraping/ impressions, Lung impressions
Newcastle Disease (ND)	Tracheal scraping/ impressions, Cecal tonsils impressions
Infectious Bursal Disease (IBD)	Bursal impressions
Inclusion Body Hepatitis	Liver impressions from affected birds
Enteric Viruses	Gut scraping of the duodenum, ileum and / or jejunum
Chicken Anemia Virus	Thymus impressions, bone marrow impressions
Marek's Disease Virus (MDV)	Tissue impressions / feather pulp sample