



## PROPER COLLECTION AND HANDLING OF DIAGNOSTIC SAMPLES

### PART 2: FTA CARDS

#### FTA CARDS

Fast Technology for Analysis of nucleic acids (FTA) cards are made of specialized paper with chemicals that protect nucleic acids (RNA or DNA) from degradation, while removing the infectious capability of pathogens. 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. An FTA card's compact size provides an ideal means to transport samples domestically or internationally with proper import approval. FTA cards also provide a stable means to store diagnostic samples for extended periods of time at room temperature.

There are two types of FTA cards, each with a specific purpose, which can be obtained from GE Healthcare:

**FTA "Classic" (WB120205)** bind DNA/RNA and release proteins when treated with the appropriate buffers.

**FTA "Elute" (WB120410)** bind proteins and release DNA/RNA following treatment.

Consult with the receiving laboratory prior to sample collection to ensure the correct type of FTA card is used.

Samples appropriate for placement on an FTA card and their diagnostic purpose:

- Whole blood – disease diagnostics, genetic analysis
- Feather pulp – pathogen identification
- Swabs from choanal cleft, cloaca, joints and organs – pathogen identification
- Tissue impression smears – pathogen identification

#### Steps for blood sample collection on an FTA card:

1. A sample is applied to the FTA card in the designated field by needle and syringe (Figure 2) or by blood loop (Figure 3) and allowed to air dry. The circle does not need to be filled entirely.
2. Up to four samples can be applied on one FTA card. Samples placed on the same card should not be allowed to mix (Figure 4), or cross-contamination of individual samples will occur.
3. Place the dry card in a sealed plastic bag for transport.
4. Once completely dry, the sample on the FTA card poses no risk of transporting infectious material. Check local regulations for importation requirements of FTA samples.
5. The laboratory receiving the FTA card will process the individual samples and extract the DNA or RNA to perform the appropriate assays requested.
6. All samples sent to Hy-Line International require prior approval and appropriate import permits.

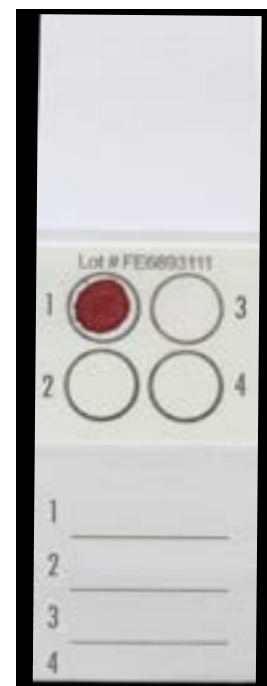


Figure 1. FTA card.

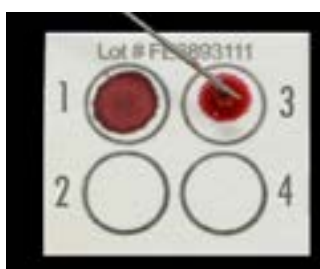


Figure 2. Application with needle and syringe.

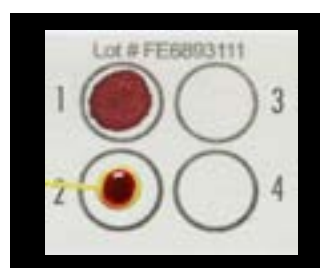


Figure 3. Application with blood loop.



Figure 4. Cross-contamination.

### Steps for making a tissue impression smear on an FTA card:

1. Cut a small piece (5 mm<sup>3</sup>) of tissue to make the impression smear (Figure 5).
2. Apply the tissue in the designated field by pressing the tissue onto the FTA card by using a finger (Figure 6).
3. Remove excess tissue to facilitate drying.
4. Place the FTA card on its side to allow cards to air dry (Figure 7). After the sample has completely dried, place in a sealed plastic bag for transport.
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 (Figure 8).

When submitting samples to a diagnostic laboratory, it is important to provide thorough and relevant flock information on the laboratory submission form.

Critical information that should accompany all diagnostic sample submissions:

- Flock identification and location
- Age of flock
- Date of sample collection
- Vaccination program
- Flock history, including pertinent health or production problems
- This information is vital to the flock veterinarian and diagnostician to make a meaningful interpretation of serological or diagnostic results and provide recommendations to improve flock health and/or production.



Figure 5. Use a small sample of the tissue of interest. Larger samples will spread beyond the designated area.



Figure 6. Lightly press the tissue onto the FTA card and remove excess tissue.



Figure 7. Completely dry the sample on the card by placing the card on its side.

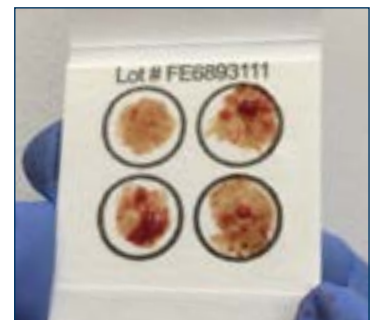


Figure 8. Up to four samples can be placed on one card.

#### Benefits of FTA cards:

- Sample Collection – easy to perform
- Safety – sample is stable and non-infectious
- Transportation – small size, although international permits required
- Storage – room temperature

