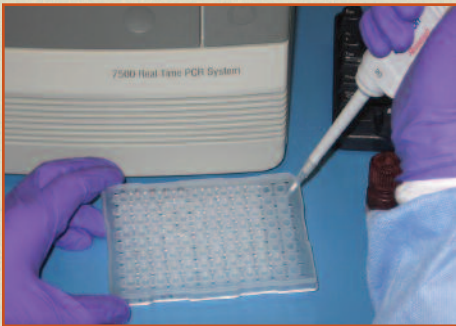


Prime PCR System™

Collection to Detection

A specimen collection and pathogen detection system for molecular diagnostic applications



Longhorn Diagnostics, a wholly owned subsidiary of PanFlu, LLC, is currently testing and validating a specimen collection system **PrimeStore™** and specific PCR assays **PrimeMix™** capable of rapidly *discriminating*:

- 1 Influenza A and B
- 2 H1, H3 and H5
- 3 other influenza subtypes (H7, H9)

from *uncultured clinical samples* requiring **less than 2 hours total analysis time.**

Prime PCR System™

- Rapid, stabilized and easy to use PCR system for pathogen detection
- Provides flexibility, speed, safety
- Fully reliable
- Stable at ambient temperatures
- Microbes are inactivated

PrimeStore™ is a 3-in-1 sample collection solution that lyses, stabilizes and preserves environmental or clinical samples for DNA/RNA analysis.

Why PrimeMix™ for Microbial Detection?

- Faster than culture (2 hours rather than 3 days)
- Significantly better specificity and sensitivity than rapid antigen detection
- Provides more data
 - Microbe-*ie* influenza
 - Microbe type-*ie* influenza A or B
 - Microbe subtype-*ie* H1, H3, H5, H7, H9

This level of information may be important in decisions related to prophylaxis, treatment, isolation, containment and cohorting patients.

Prime PCR System™

Step One

Place specimen in PrimeStore™

- Inactivation, transport, and DNA/RNA preservation solution
- PrimeStore™ is proprietary and superior to current transport media
- Samples are ready for safe transport, shipping, or long term storage

Step Two

Extract DNA/RNA

- PrimeStore™ accelerates lysis and DNA/RNA separation, and preserves DNA/RNA integrity
- Enhances DNA/RNA extraction efficiency

Step Three

Pipette PrimeMix™ into reaction well

- Pipette DNA/RNA into reaction well
- Begin PCR (other PCR assays require 5 or more pipetting steps that increase opportunities for errors and contamination)

Microbe Detection

- 60 - 90 minutes to microbe detection (DNA/RNA)
- Sensitivity 1-100 copies

Influenza PCR Assay

- Flu / No Flu
- FluA / FluB
- FluA H1, H3, H5
- H7, H9 and anti-viral resistance (under development)

Assays to be Developed for other Pathogens

- Viral: Adeno14, HIV, SARS, Dengue, Ebola
- Malaria
- Tuberculosis
- Others

These assays and required instrumentation can be taken into the field for point of contact analysis / on site assessment:

- naturally occurring infectious disease outbreaks
- bioterrorist attacks
- the battlefield
- border crossings
- airports
- remote areas, etc.

Advantages of Prime PCR System™

PrimeStore™

- Collection / Transport Solution
 - Inactivates / kills and lyses microbe
 - Destroys nucleases (RNase/DNase)
 - Compatible with multiple extraction systems
 - Preserves DNA/RNA integrity
 - Facilitates DNA/RNA extraction and purification
 - Easy transport and shipping at ambient temperatures
 - Ready for storage

PrimeMix™

- Highly robust, sensitive and reliable
- Detection at the point of patient care
- Deployment and field use
- Increased stability
 - Months at 4°C
 - Weeks at room temperature
- Easy to use
 - Few pipetting steps
 - Less chance for operator error
 - Decreased opportunity for contamination
- Compatible with essentially all real-time PCR units
 - ABI 7500/7000
 - Idaho Technologies RAPID, JBAIDS
 - Roche Lightcycler

PrimeMix PCR System™ Utilization

- Exceptional PCR assay system for hospital and regional laboratory
- Ideal for patient point of care PCR microbial detection
- Suitable for field deployment and outbreak surveillance
- Useful for triage, isolation and containment decisions
- Could deliver real-time antimicrobial resistance data
- Helpful for patient treatment and contact prophylaxis and limiting costly tests
- Pandemic and outbreak management



Laredo, Texas: Field Deployment Exercise Screening for H5 influenza

- Ambient air temperature = 99°F
- Wind conditions (12-15 mph SW)
- The R.A.P.I.D. instrument (110-120 volts) was powered by a portable generator.