

Currently, the world is in the midst of a WHO Pandemic Alert Phase 5 for A/H1N1, commonly referred to as swine flu, there being confirmed cases of human-to-human transmission. Some strains of swine flu have never been seen before, containing a mixture of genetic material from human, pig and bird flu. This is a new flu virus cocktail from which the global population is unlikely to have strong immunity. There is a necessity to use molecular diagnostic techniques for the required specificity and sensitivity in fighting the war against influenza pandemics. New generation detection methods like nucleic acid sequence-based amplification (NASBA) or polymerase chain reaction (PCR) enable mass screening at high speeds.

Consequently, Hai Kang Life is working to develop innovative molecular diagnostic methods for detecting pathogenic viruses of high risk. Achievements in avian influenza have received international accreditation and the detection systems have been validated by field tests, using live samples from around the world. Hai Kang Life continues to advance NASBA technology, upgrading the optical methods for implementation in any laboratory, rural clinics or in the field.

NASBA is a homogeneous, isothermal and direct RNA amplification process

Enzyme-linked oligonucleotide capture (EOC) employs a standard ELISA plate reader

A UV-Visible optical method is available for point-of-care deployment

	NASBA	NASBA-EOC	NASBA-POC
Detection	Chemiluminescence	Colorimetric	UV-Visible
Process Time	2 hr	4 hr	2 hr
Sensitivity*	✓✓✓	✓✓✓	✓✓✓
Reliability	✓✓✓	✓✓✓	✓✓✓
User Friendly	✓	✓✓	✓✓✓
Cost per test	High	Low	Low

* Sensitivity comparable to real time PCR†



NASBA-POC results measured with a UV lamp, (left picture) precipitate confirms a positive result.

References

- Detection of foot and mouth disease virus by nucleic acid sequence-based amplification (NASBA), *Vet Microbiol* 128,101-110 (2008).
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- Application of avian influenza (AIV) detection kits using nucleic acid sequence-based amplification to detect AIV. *J Jpn Soc Poultry Dis* 41, 151-158 (2005).
- Comparison of nucleic acid-based detection of avian influenza H5N1 with virus isolation, *BBRC* 302, 377-383 (2003).