

The beginning of this new year brings several new and improved products from Idaho Technology (ITI), beginning with the release of a new RAZOR® pouch, The 10™. We are also pleased to announce a new small amplicon genotyping assay that improves on

the probe method and the FDA clearance of our Plague and Tularemia biothreat detection kits.

More new products are planned for release in the near future, so stay tuned for updates.

The 10™

The 10 pouch is a leap in capability for RAZOR users, offering the ability to test for 10 pathogens in one pouch. This exceptional pouch employs ITI's universal control, a synthetic PCR assay that eliminates cross-contamination from amplified PCR product, and a unique inhibition control. With minimal setup, an operator can have results in 30 minutes.

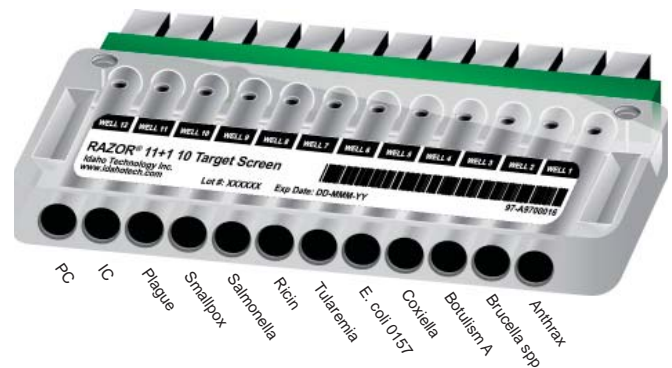
The 10-target screen kit tests for the following 10 biothreat pathogens:

- Anthrax
- *Brucella* spp.
- Botulism A
- *Coxiella*
- *E. coli* O157
- Tularemia
- Ricin
- *Salmonella*
- Smallpox
- Plague

These pathogens have been identified by the Centers for Disease Control and Prevention as Category A or B biothreat pathogens. Category A pathogens pose a high

risk to the public and to national security and Category B pathogens pose the second greatest risk (see <http://emergency.cdc.gov/bioterrorism/overview.asp>).

The 10 pouch can be used with both the RAZOR and RAZOR EX systems. This product will be available April 2008. For more information or to order, please contact ITI Customer Service at (801) 736-6354, order no. RAZR-ASY-0061, The 10 Target Screen Kit.



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Food and Biothreat Detection

The possibility of the U.S. food supply being deliberately or accidentally contaminated poses a real threat as seen in the food scares in the past few years. As an answer to this dilemma, ITI has developed the R.A.P.I.D.® LT Food Security System (FSS); a fast molecular-based detector system for both food security testing and biothreat detection.

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Small Amplicon Genotyping Using the LightScanner® System

Small amplicon genotyping is a simple yet powerful genotyping technique. No probes are required, making this technique rapid and inexpensive. Now, with the high-resolution LightScanner instrument and a specialized genotyping master mix containing LCGreen® Plus dye and internal calibrators, small amplicon genotyping can produce the same high accuracy results associated with probe-based techniques.

Most SNPs can be genotyped easily by monitoring the melting profiles of small amplicons (50–100 bp) in the presence of LCGreen dye. In some cases where the polymorphism consists of a base pair neutral change (A>T, G>C), the homozygous species have such subtle differences in melting temperature that the noise in the system can mask the difference between the two alleles. This limitation can now be overcome by using the LightScanner High Sensitivity Genotyping Master Mix along with the LightScanner System. The signal provided by temperature calibrators included in the mix is used to correct for small mechanical and chemical

variations resulting in highly precise genotyping calls generated automatically by the software. In general, this Master Mix should be used for small amplicon genotyping of polymorphisms where the melting temperature of homozygous alleles is expected to differ by less than 0.5°C.

The panels below illustrate the genotyping results obtained without (Figure 1) and with (Figure 2) the LightScanner High Sensitivity Genotyping Master Mix for a G>C SNP in a 42 bp product. Homozygotes display single melting peaks. Heterozygous samples (in grey) show broad melting profiles indicating the presence of both heteroduplexes and homoduplexes.

These results demonstrate the benefits of using the specialized master mix for small amplicon genotyping. The High Sensitivity Genotyping Master Mix will be launched in March 2008. For more information, please contact Rachel Jones at (801) 736-6354 x. 438 or at rachel_jones@idahotech.com.

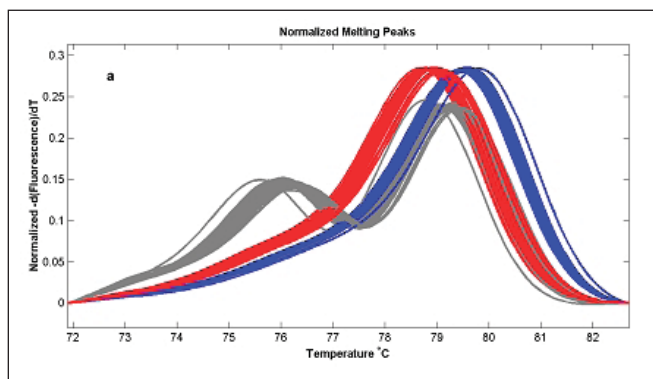


Figure 1. Genotyping results without LightScanner High Sensitivity Genotyping Master Mix.

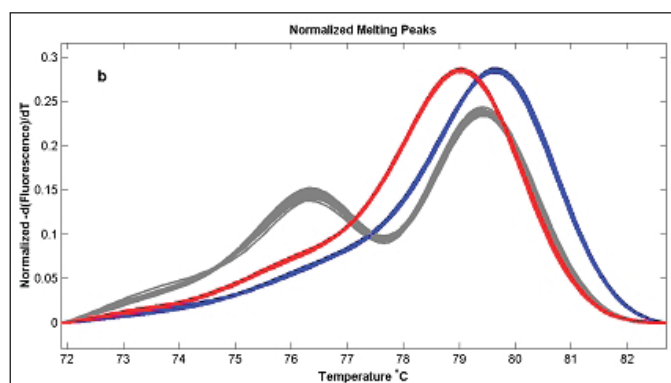


Figure 2. Genotyping results with LightScanner High Sensitivity Genotyping Master Mix.

Food Detection (continued from page 1)

Built on a history of proven military detection systems, the LT platform is optimized for multiple food and biothreat matrices enabling all pathogen testing to be done on one platform.

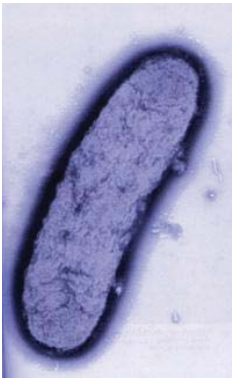
The R.A.P.I.D. LT FSS uses real-time PCR technology, providing rapid and accurate results. The *Salmonella* assay has been submitted to the Association



of Official Analytical Chemists (AOAC) and approval is expected by March 2008. Approvals for *Listeria* spp., *E. coli* O157:H7, and *Campylobacter* will come later in the year.

For more information about the R.A.P.I.D. LT FSS, please contact Dennis D'Alfonso at dennis_dalfonso@idahotech.com or at 801-230-8614.

ITI Receives FDA Clearance for Plague and Tularemia Detection Kits



Yersinia pestis

On January 3, 2008, ITI received clearance from the U.S. Food and Drug Administration (FDA) for the marketing of two new biothreat detection kits—the Joint Biological Agent Identification and Diagnostic System (JBAIDS) Plague and JBAIDS Tularemia Detection Kits. Both kits use real-time PCR technology to identify the causative agents of plague (*Yersinia pestis*) and tularemia (*Francisella tularensis*).

Todd Ritter, Chief Corporate Development Officer, said, “Idaho Technology continues to add capability to its existing systems making our military first responder customers better prepared to do their important work. Our infectious agent pathogen kits provide additional tools for making decisions and protecting the country.”

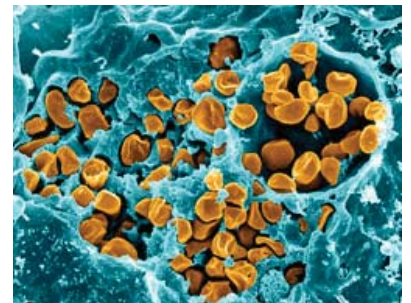
The JBAIDS Plague and JBAIDS Tularemia Detection Kits can be used to test blood, sputum, positive blood cultures, and colonies and tests yield results in less than 4 hours. The current method of growing, isolating, and identifying a culture can take as long as several days for results.

Clearance by the FDA allows both reagent kits to be used for human diagnostic testing to help ensure that the country is better prepared to respond to a bioterrorism attack. Both plague and tularemia are classified as Category A Select Agents by the Centers for Disease Control and Prevention (CDC). Category A agents are high-priority organisms that pose a risk to national security because they can be used as agents of bioterrorism.

The two pathogen detection kits join ITI’s growing portfolio of kits used in conjunction with the company’s detection instruments and extend the company’s leadership position in the biothreat detection market. The detection kits are intended for use by trained clinical laboratory personnel for on-site analysis of dangerous biological pathogens.

Plague and tularemia both occur in nature and can be grown in large quantities in a laboratory setting. If distributed in aerosol form, which is the likely form for a bioterrorist attack, they both easily infect the lungs. The infected person can then infect other people before the person knows he or she is sick, thus spreading the diseases.

ITI also offers an Anthrax Detection Kit and plans to seek FDA clearance for the JBAIDS Brucellosis Detection Kit. Kits may be ordered by calling ITI Customer Service.



Francisella tularensis (in gold)



Photo of the Quarter

Sawtooth Mountains, Idaho
(photographer: Matt Scullion)

Dates to Remember

March

2–5	Society of Inherited Metabolic Disorders (SIMD) Pacific Grove, California http://www.simd.org
17–19	Food Safety and Security Summit 2008 Washington, D.C. http://www.foodsafetysummit.com
12–16	American College of Medical Genetics (ACMG) Phoenix, Arizona http://www.acmgmeeting.net
27	Longhorn Institute of Food Technologists (LIFT) Dallas, Texas http://www.longhorn-ift.org/registration/annual_suppliersnightinfo.htm

April

7–12	FDIC 2008 Indianapolis, Indiana http://fdic08.events.pennnet.com/fl//index.cfm
27–30	24th Clinical Virology Symposium Daytona Beach, Florida http://hsc.usf.edu/nocms/medicine/medmicro/virology

May

4–7	United Fresh Las Vegas, Nevada http://www.unitedfreshshows.com
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Department of State Note: The R.A.P.I.D. System and RAZOR Instrument are controlled for export under the International Traffic in Arms Regulations (ITAR), administered by the U.S. Department of State, Directorate of Defense Trade Controls (DDTC) and may not be exported or transferred to any foreign national without prior approval of the DDTC.

R.A.P.I.D.[®] and RAZOR[®] Systems Training

ITI offers training courses for the R.A.P.I.D. and RAZOR systems. Training for two people is included with the purchase of the R.A.P.I.D. or RAZOR instruments, and more can attend for an additional cost. The training courses are three days for the R.A.P.I.D. and one day for the RAZOR. Courses focus on concepts of operation, sample preparation, reagent setup, and software. If you would like to attend or schedule a training course, please contact our training staff at 1-800-735-6544 x. 439.



LightScanner Tutorials on the Internet

The following tutorials and webinars can be accessed via www.idahotech.com/Support/Webinars.html:

- *Understanding the Melting Curve*
- *LightScanner Step-by-Step Animation*
- *Slideshow—The LightScanner System*
- *Screening Genetic Variants Associated with Dyslipidemia using the LightScanner System*
- *High Throughput Genotyping Using Unlabeled Oligonucleotide Detection Probes*

If you have any questions about the topics of these webinars or would like more information, please contact Rachel Jones at rachel_jones@idahotech.com or (801) 736-6354 x. 438.

Editor's Note: If you have comments or suggestions for articles, please e-mail the editor at loretta_orgill@idahotech.com.



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