

FASTSPECIES-ID™

A PORTABLE, ACCURATE, AND COST-EFFECTIVE DNA ANALYSIS PLATFORM FOR RAPID ON-SITE IDENTIFICATION OF MANY COMMERCIAL SPECIES IN A SINGLE-TUBE TEST



MEAT TESTING



ILLEGAL WILDLIFE TRADE TESTING



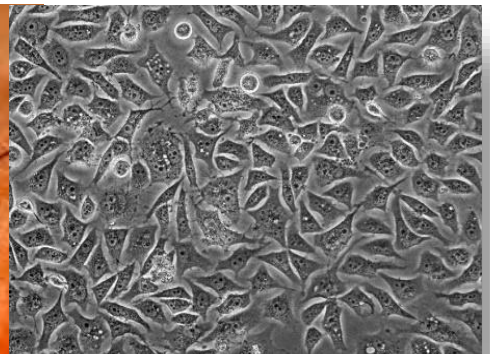
PATHOGENIC BACTERIAL/FUNGI TESTING



INVASIVE PEST TESTING



DISEASE VECTOR TESTING



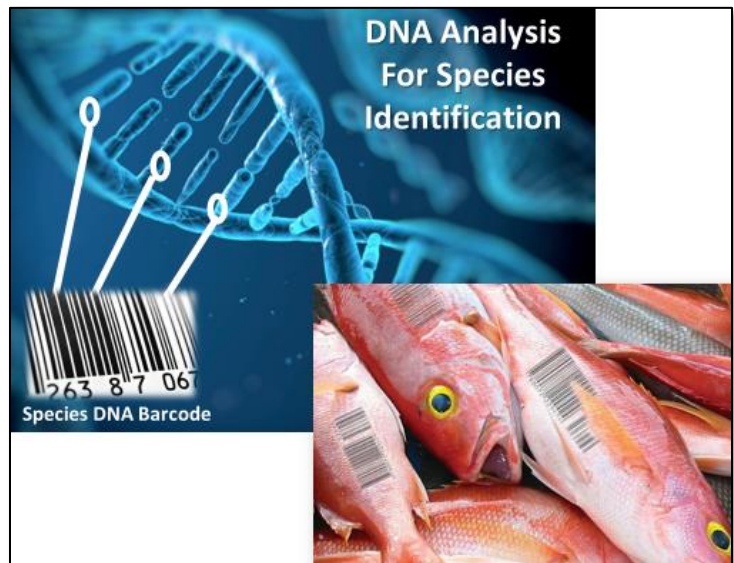
CELL LINE SPECIES TESTING

WHY TEST FOR SPECIES?

In the food industry, mislabeled products disguising lesser-value/lower-quality species unfairly compete for profits, harm brands/consumer trust, and risk consumer safety by preventing proper testing for species-specific hazards (toxins, pathogens, chemicals). The agricultural pest management industry relies in rapid identification of invasive/destructive species, particularly at ports of entry. Health entities requires identification of disease vector species for proper intervention. Biopharmaceutical companies demand species certification of production cultured cell lines.

TECHNOLOGY OPPORTUNITY

- Species DNA identification relies on the sequence of standardized DNA segment as a molecular identification tag for most species on Earth (mitochondria COI DNA barcode for animals, 16SrDNA for bacteria). **But reading the DNA barcode sequence is costly, time-consuming, and requires sending each sample out for sequencing.**
- Species-specific DNA tests are simpler and faster to do **but require separate tests for each species.**



THERMAGENIX'S SOLUTION

Rapid Authentication of Any Species without Sequencing

Sample Collection

Fast DNA Preparation

Results in About 2 Hrs

Closed-Tube DNA Barcoding

- Simple
- Affordable
- Rapid

SIMPLE SAMPLE PREP

- Specimens collected on-site are processed in a single step to release DNA.
- DNA is then added directly to the PCR reaction.

REVOLUTIONARY DNA ANALYSIS

- **High-Precision PCR** (HP-PCR) with **ThermaStop™** generates large amounts of species-specific DNA target.
- Sets of strategically located **ON-OFF probe pairs** targeting the PCR products

convert species-specific DNA sequences into characteristic fluorescent signatures that are automatically compared to a cloud-based reference library for immediate species identification less than two hours.

PORTABLE PCR PLATFORM

mic pcr

bms
bio molecular systems


- PORTABLE
 - Weight: < 5 lbs.
 - AC, Battery, or Solar-Powered
- CONVENIENT
 - 48 Samples per Instrument

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- These technologies are combined on a highly-affordable portable instrument (**MIC PCR Cycler**) from **Bio Molecular Systems (Queensland, Australia)** for rapid on-site species identification.

ADVANTAGE

Universal Single-Tube Test for Identification of Many Species Using the Same Set of Reagents



**Strategies
for DNA Species
Authentication
& Characterization**

	One Test for All Species	Single-Tube Test	Rapid Low-Cost	Portable On-Site
DNA Sequencing	YES	NO	NO	NO
Species Specific PCR	NO	YES	YES	YES
THERMAGENIX FAST-ID TESTS	YES	YES	YES	YES