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One Health Diagnostics®

Rapid Microbial Detection for Commercial Sterility

Automated.
Accurate.
Proven.

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We Create Innovative Diagnostics for a Healthier World.

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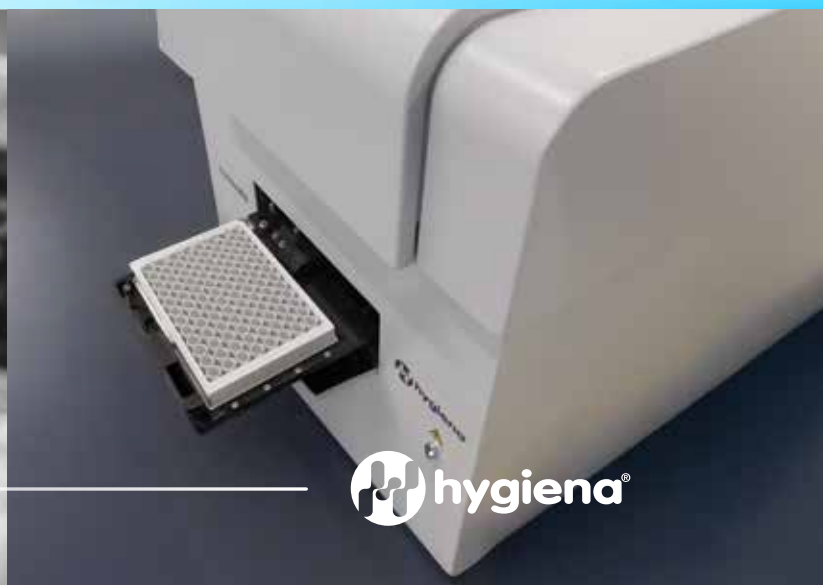
Meeting Modern Commercial Sterility Challenges

Today's food and beverage producers face growing pressure to safeguard product quality while maintaining speed and profitability.

In aseptic and extended-shelf-life (ESL) operations, traditional plating methods often cause bottlenecks, resulting in inventory being held before release and tying up valuable space and capital.

The Innovate™ System changes that. Using advanced ATP bioluminescence technology, the Innovate System delivers microbial detection results in as little as 24 hours, accelerating release decisions, reducing risk, and helping you stay aligned with global commercial sterility standards.

Product	Product No.
Innovate™ System	MCH4000
Innovate™ Software	MIS4011



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Automate. Accelerate. Achieve More.

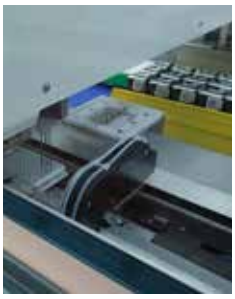
Manual testing can be slow, inconsistent, and resource intensive. The **Innovate System** and **Autosampler III** automate every stage of the process, from sampling directly from containers, detection and reporting, freeing up your team to focus on higher-value tasks.

Product	Product No.
Autosampler III	MCH4003

Why use Autosampler III for sample automation?

- Streamlined workflows that run up to 576 samples per hour
- Integrated barcoding and data tracking for full traceability
- Less hands-on sampling time frees technician time - Continuous workflow eliminates interruption from the sampling process to maximize efficiency
- Removal of labor-intensive sampling promotes technician well-being
- Onboard control features built into the instrument (alignment and vision system) help minimize maintenance and downtime

The result? Higher throughput, reduced labor costs, and reliable results that keep production moving.



Streamlined integration of the Innovate System

1 The product is filled into containers along the filling line and then packed into shipping containers.

2 The packaged products are incubated at a controlled temperature according to the customer's specific requirements.

3 The Autosampler III performs sample preparation steps and store the completed microplates.

4 The completed microplates are transferred to the Innovate system for testing.

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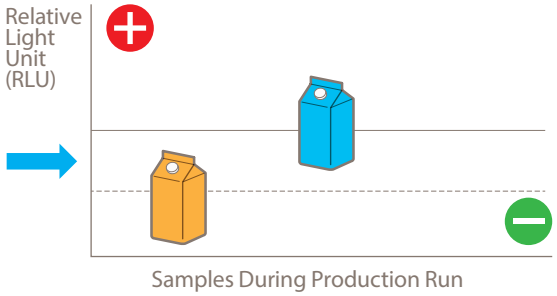
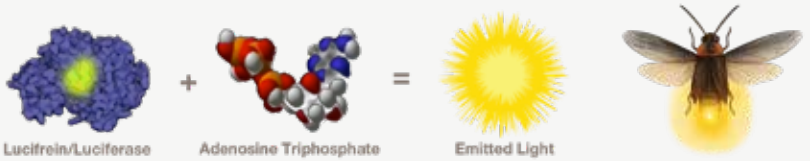
ATP Bioluminescence that Brings Results to Light

At the core of the Innovate System is ATP bioluminescence technology, a rapid and highly sensitive method for detecting viable micro-organisms. By isolating microbial ATP and producing light through robust enzymatic reactions, Innovate delivers definitive microbial results without the delay of waiting for colonies to grow.



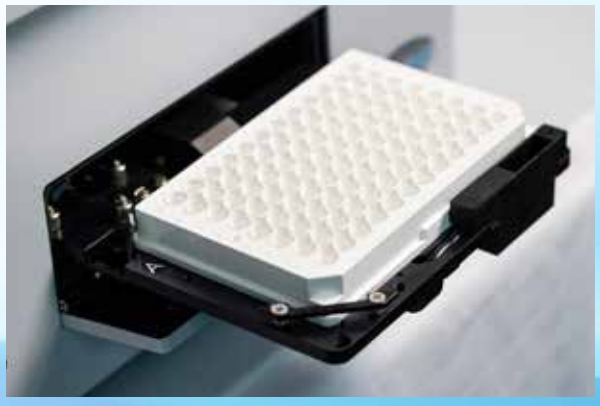
How the Technology Works



1. **Sample Incubation:** Free ATP, Microbial Cells
2. **ATX Addition:** Hydrolyze free ATP, leaving in-tact microbial cells
3. **CellSolver Addition:** Inactivate ATPase enzyme, lyse microbial cells to release microbial ATP
4. **Sensilux Addition:** Luciferase enzyme reacts with microbial ATP to produce light

The Innovate System works exclusively with the RapiScreen™ reagent family. RapiScreen technology is based on ATP bioluminescence, where the enzyme luciferase catalyzes the consumption of microbial ATP to produce light.

ATP bioluminescence can detect living microorganisms with increased sensitivity, providing an objective result with a faster detection time, as opposed to waiting for visible colonies to grow on agar plates.



During the RapiScreen test, samples are treated prior to the bioluminescence assay to minimize non-microbial sources of ATP, followed by a lysis step to isolate microbial ATP.

This means that when compared to traditional culture methods, the Innovate System:

- Detects viable organisms in as little as 24 hours
- Eliminates subjective interpretation of plate counts
- Provides consistent, AOAC RI PTM approved accuracy

Built for reliability and reproducibility, the Innovate System provides a scientifically validated, regulatory-compliant way to ensure product safety and sterility.

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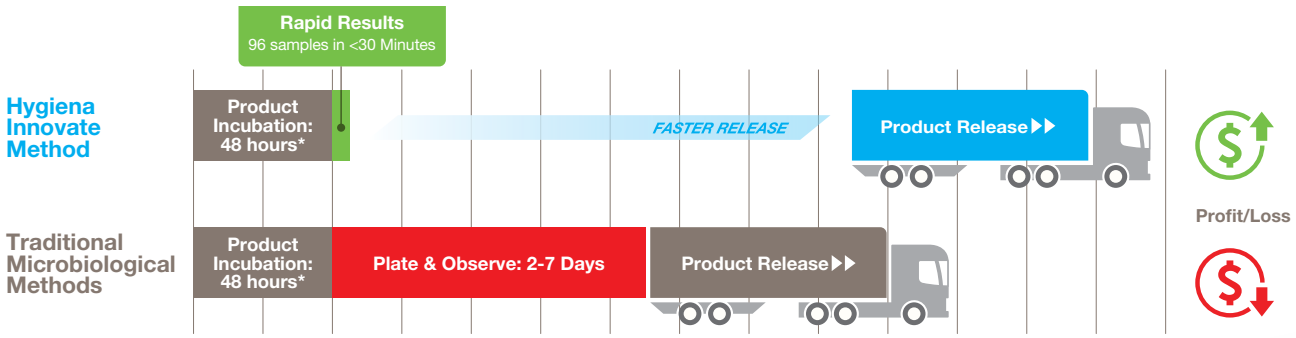
From Days to 30 minutes: Time & Cost Savings

Every day your product stays in quarantine costs time, money, and storage space. The Innovate System turns days into minutes, freeing up capacity, lowering energy use, and accelerating revenue flow.

A major North American beverage manufacturer using the Innovate System saw significant results:

- Release time reduced by up to 9 days
- Retesting time (if required) reduced to 30 minutes
- Hands-on labor significantly reduced: no need to autoclave media, no pour plates. Direct in-bottle incubation (100% in-pack)
- The Innovate System was able to detect microbial contaminants that traditional pH methods missed.
- They scaled up to 1,000 samples per day on Innovate.
- Additional benefits: less lab space & fewer incubators required; aligns with sustainability, waste reduction, and cost savings.



* Product incubation time depends on customer's SOP

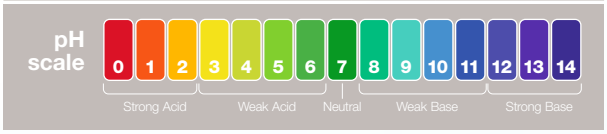
Validated Across Diverse Product Matrices

The Innovate System is validated for a wide range of UHT and ESL matrices. Its flexibility enables seamless integration across multiple product lines, maintaining the same level of sensitivity and accuracy, regardless of formulation. From easy to hard-to-test product types, including:

- Clear, opaque or highly pigmented
- Filterable or non-filterable
- Soluble or non-soluble
- High or low pH
- Preserved or non-preserved
- Aseptically packaged or not

Products Tested

Beverage Kit			Dairy Kit			
2	3	4	5	6	7	8
Fruit Juice	Ketchup	Cold Brew Coffee	Tea Concentrate	Cheese Sauce	Cold Brew w/ Creamer	Almond Creamer
Lemon Juice	Mustard	Sport Drink	Broccoli Soup	Chicken Broth	Meal Replacement Drink	
Cranberry Juice	Orange Juice	Iced Tea		Chocolate Milk	UHT & ESL Milk	
	Strawberry Puree	Tomato Paste		Chocolate Protein Shake	Full-fat Milk	
	Apple Juice	Tomato Soup		Heavy Cream	Low-fat Milk	
	Grape Juice	Vegetable Puree		Half & Half	Nut Milk	
	Exotic Mixed Fruit & Pink Guava Juice	Coconut Water		Flavored Milk	Oat Milk	
				Whole Milk	Soy Milk	
	Classic Mango Juice with added sugar			Nutrition Drink Milk	Non-dairy Creamer	
				Pudding	Almond Milk	
					Infant Formula	



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Application Labs

When installing the Innovate System, you can trust that you are being supported by a global team of scientists and engineers from Hygiena. This partnership in rapid microbial detection comes with a knowledgeable team of application scientists to support your commercial sterility program.

Our Application Labs become part of your team:

- Method verification and matrix validation
- On-site implementation and training
- Guidance from regulatory and process authorities

We assist in verifying results confidently, from evaluation to implementation, and as your program evolves. A typical validation study for a new customer can be completed within 4 weeks & for existing customers; this time can be condensed to as quickly as 2 weeks.

AOAC Method Approvals

RapiScreen™ Dairy and Beverage Kits have earned AOAC RI Performance Tested Methods℠ Certification (License #092301 and 052301, respectively), giving manufacturers complete assurance that their rapid microbial results meet the highest international standards.

PERFORMANCE TESTED AOAC RESEARCH INSTITUTE LICENSE NUMBER 092301

Hygiena is also an active member of the International Dairy Federation (IDF), advancing global best practices in final product testing.

Fédération Internationale du Lait • International Dairy Federation • FIL IDF

Primary Reagents	Product Number	AOAC Certified
RapiScreen™ Dairy Kit	KIT4000	#092301
RapiScreen™ Dairy 5000 Kit	KIT4001	#092301
RapiScreen™ Beverage Kit	KIT4010	#052301

Support Reagents & Consumables	Product Number
ATP Positive Control Kit	KIT4014
Monthly Maintenance & Cleaning Kit	KIT4012

RapiScreen Dairy Kit containing everything needed to run the method including microtiter plates

RapiScreen Beverage kit containing everything needed to run the method including microtiter plates

Monthly Maintenance and Cleaning Kit

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If you have any questions, visit: **www.hygiena.com**

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