



Microbial Solutions

Dairy, Beverage and Food Industries



Hygiena® Microbial Solutions: Rapid Microbial Detection

Can you rely on your testing methods?

Testing for microbial contamination in your intermediate as well as your final product is a critical part of ensuring consumers receive clean, safe product. Surprisingly, manufacturers frequently overlook the limitations of current release tests, such as subjectivity and long assay times, and still rely on traditional growth-based or indirect methods to confirm product safety. Moreover, many manufacturers have difficulty assessing the unrealized efficiencies available to them, such as reducing their inventory carrying costs and warehousing requirements, and minimizing the risk of damaging their brand...until it's too late.

Why risk your product, your reputation and your bottom line when there are proven methods and modern technology that enable you to release product more quickly and more confidently?

The Innovate™ Rapid Microbial Screening System uses adenosine triphosphate (ATP) bioluminescence-based detection, an accurate, rapid method that is ideal for environments dependent on quick turnaround, such as those in the dairy, beverage and food industries. At the forefront of the industry is the Innovate System, a benchtop instrument that combines high system throughput with a small footprint. The Innovate System works exclusively with proprietary RapiScreen™ reagents, which have been validated on a wide variety of raw materials, in-process formulations and finished goods. In addition, RapiScreen Dairy and Beverage Kits have earned AOAC RI *Performance Tested Methods*SM Certification (License #092301 and 052301, respectively).*



* Please see AOAC RI PTM certificates for performance claim details.

Innovate System

The Innovate System is an automated luminometer providing high throughput screening in a compact, benchtop system. Our RapiScreen reagents utilize ATP bioluminescence, the industry standard for rapid microbial screening of ultra-heat treated (UHT) and extended shelf life (ESL) products. Exclusively designed for fast-paced environments that depend on quick turnaround, such as those within the dairy, beverage and food industries, the Innovate System delivers accurate, objective and confident results to ensure your manufacturing operations run at peak efficiency.

Multitasking automation allows simultaneous testing of 96 different samples on a single microtiter plate every 30 minutes. Subsequent assays can be prepared even while the system is in use to keep high-volume operations running smoothly. With reagents formulated for extended stability and on-board reagent temperature controllers, reagents can be stored on the system, improving ease-of-use and reducing waste.

| Product | Product No. |
|------------------|-------------|
| Innovate™ System | MCH4000 |

Innovate Software

The intuitive Innovate software includes on-screen support and a color-coded graphical user interface, providing automated data capture and archiving from the Innovate System. With robust system administrator capabilities and customizable security settings, results can be accessed from either a central or a remote location. In addition, an integrated database allows users to store, sort and query results data and export to common applications and Laboratory Information Management Systems (LIMS).

| Product | Product No. |
|--------------------|-------------|
| Innovate™ Software | MIS4011 |



Hygiena Microbial Detection Reagents

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 potentially visible colonies to grow on agar plates. During the RapiScreen test, samples are treated before the bioluminescence assay to reduce non-microbial sources of ATP. This step uses proprietary reagents to ensure sensitive and reproducible results.

| Primary Reagents | Product No. | AOAC Certified* |
|-------------------------------|-------------|-----------------|
| RapiScreen™ Dairy 1000 Kit | KIT4000 | #092301 |
| RapiScreen™ Dairy 5000 Kit | KIT4001 | #092301 |
| RapiScreen™ Dairy 25000 Kit | KIT4015 | #092301 |
| RapiScreen™ Beverage 1000 Kit | KIT4010 | #052301 |

* Please see AOAC RI PTM certificates for performance claim details.



Support Reagents and Consumables

Additional reagent kits required for maintenance and support are produced in the same ISO-certified facility to the same standards as our primary reagent kits.

| Support Reagents and Consumables | Product No. |
|---|-------------|
| ATP Positive Control Kit | KIT4014 |
| Monthly Maintenance Cleaning Kit for Innovate | KIT4012 |

Accessories

| Accessories | Product No. |
|---|-------------|
| Pipette, 20 – 200 µL | MIS4085 |
| Pipette, 100 – 1,000 µL | MIS4086 |
| ATP-free pipette tips, 200 µL (10 x 96 pcs) | MIS4088 |
| ATP-free pipette tips, 1,000 µL (10 x 100 pcs) | MIS4089 |
| Non-sterile pipette tips, 200 µL (10 x 96 pcs) | MIS4091 |
| Non-sterile pipette tips, 1,000 µL (10 x 100 pcs) | MIS4092 |
| Wide-bore pipette tips, 200 µL (10 x 96 pcs) | MIS4090 |
| Microtiter plates PS grey 96 | MIS4000 |
| Microwash, 500 mL | KIT4043 |
| Antifoam dropper bottle | MIS4083 |

Laboratory Services

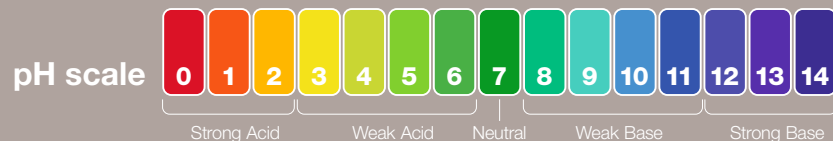
Hygiena offers a variety of laboratory services to support your product evaluation needs, including product suitability and methods development. Please contact your sales representative for additional information.

Rapid Microbial Screening System

The Innovate System delivers quality control results in less than 1 hour following a preliminary incubation period, enabling Dairy, Food & Beverage manufacturers to confirm rapidly the quality of their product and quickly release them to market.

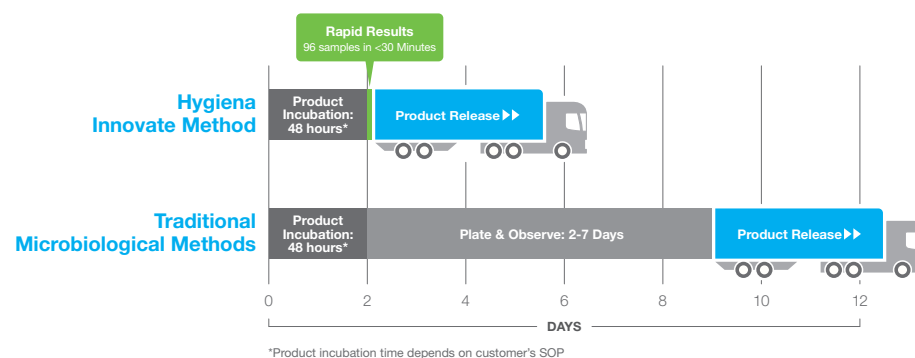
Products Tested

| 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 | |



Release Products Days Faster

The Innovate System is designed for fast, efficient and safe product release. From screening raw materials and work-in-process inventory to releasing finished goods, the Innovate System is a great fit for packaged dairy, food and beverage products where there is a low expectation of bio-burden, such as in UHT pasteurized products.



Unmatched Versatility

Cheese sauce. Pulpy juices. Thick puddings. The Innovate System can test them all. No other rapid method covers the range of products and applications we can test. The Innovate System is flexible and easy to use, even with hard-to-test product types that are:

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