

Specifications

Measurement Unit



Model Name	ML-100	
Measuring Principle	High-sensitivity ATP bioluminescence	
Number of Samples	Maximum 24 samples	
Minimum Sample Size	100 μ L	
Measurement Parameters	Amount of ATP in viable cells (unit: amol = 10^{-18} mol)	
Measurement Range	0-1000 amol (Calibration with 0 and 1000 amol standard solutions for each measurement)	
Measurement Processing Time	Approx. 2.5 hours (excluding filtration and other pretreatment time)	
Guaranteed Performance	Repeatability	CV \leq 5.0% (1000 amol standard solution)
	Linearity	R ² : 0.99 or more, slope: 0.90-1.10 (ATP standard solution automatically prepared for multiple concentrations within the measurement range)
	Limit of detection	1.0 amol
Air Cleanliness	JIS B 9920 Class 5, ISO 5, US209E Class 100 recommended	
External Dimensions	500(W) \times 500(D) \times 500(H) mm (excluding protruding parts) Maximum height 870 mm	
Weight	45 kg	
Power Specifications	AC 100-240V, 250VA, 50/60Hz	

Filtration Unit



Model Name	ML-01-FU
Number of Samples	Maximum 12 samples
Sample Volume	100 mL per port
Filtration Time	Approx. 30 minutes (WFI 100 mL)
External Dimensions	420(W) \times 340(D) \times 380(H) mm
Weight	20 kg
Power Specifications	JP: AC 100V, 175VA, 50/60Hz
	EU, US: AC 220-240V, 175VA, 50/60 Hz

Range of Application

Process	Purpose	Sample
Manufacturing Process Control	Monitoring of manufacturing water	City water, pure water, pharmaceutical water
	Cleaning validation	Water for cleaning and rinsing
	In-process monitoring	Culture medium in-process sample
Environmental Monitoring	Surface microorganisms detection	Water (Sampling with swabs)
	Airborne microbe detection	Air (Collects airborne microorganisms in water)
Release Test	Sterility test	Pharmaceuticals, Beverages
	Cellular products	Cell culture media

Pre-treatment may be required for some samples.
Please contact us to determine if measurement is possible.

Consumables

Sample Tube



Sample Cartridge



Pipette Tip



Reagents



The HORIBA Group adopts IMS (Integrated Management System) which integrates Quality Management System ISO9001, Environmental Management System ISO14001, and Occupational Health and Safety Management System ISO45001. We have now integrated Business Continuity Management System ISO22301 in order to provide our products and services in a stable manner, even in emergencies.



Please read the operation manual before using this product to assure safe and proper handling of the product.

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Rapid Microorganism Detection System

Rapica





Aiming for faster, more sensitive, microbiological detection

Microbiological testing is used to protect the quality of products in a variety of industries including pharmaceuticals, beverages, foods, and chemicals. The main method is the culture method, and although incubation times vary depending on the target microorganism, it can take more than a week to obtain test results when sterile or near-sterile conditions are required. Although it is required for safety, “time” has a significant impact on costs. With intense competition, today's society must seek to improve quality, reduce costs, and increase speed. Reducing the time required for microbiological testing is an important issue for all industries.

The name of HORIBA's rapid microorganism detection system is Rapica. The time required for microbiological testing has been drastically reduced, as the filtration and concentration of a sample only takes 30 minutes (for 100 mL WFI), while the luminescent reaction measurement thereafter takes approximately 2.5 hours. Importantly, it is possible to achieve same day detection at the single microbe level. HORIBA also provides full support for evaluation testing and method development.

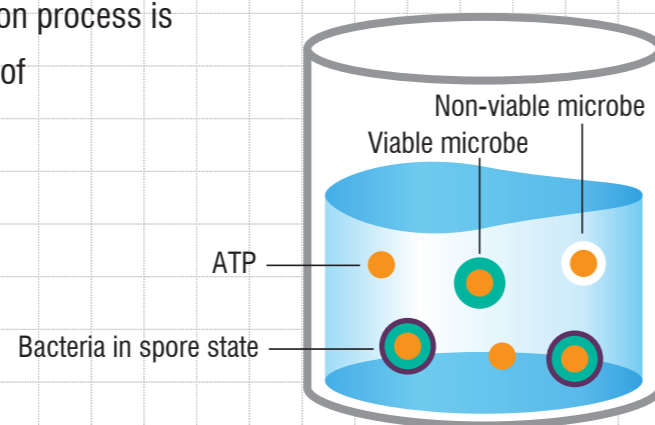
Rapid microbial detection using high-sensitivity ATP bioluminescence

Rapica, based on the ATP bioluminescence, brings together HORIBA's technologies to achieve a detection limit of 1 amol. It is now possible to detect trace amounts of ATP in 1 cell of a microorganism.

*The average ATP content of 24 Gram-negative bacteria is 1.48 amol. Reference: N. Hattori et al., Analytical Biochemistry 319(2003)287-295

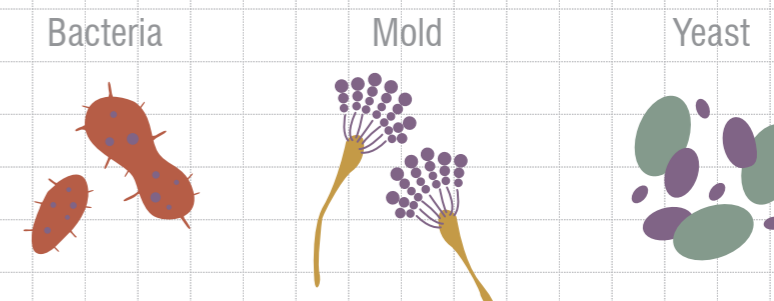
Measurement Flow of the High-Sensitivity ATP bioluminescence

The high-sensitivity ATP bioluminescence uses five different reagents for measurement. The reagent injection process is automated, saving labor and reducing the risk of contamination through human interaction.



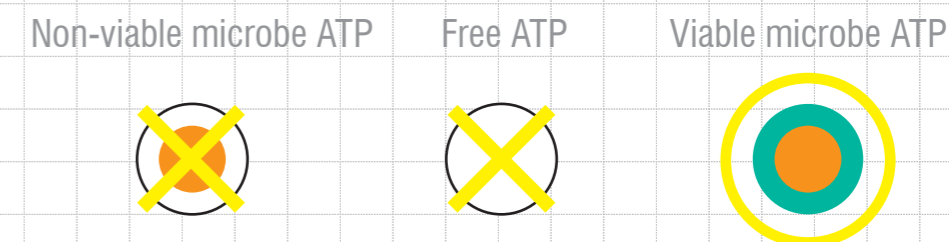
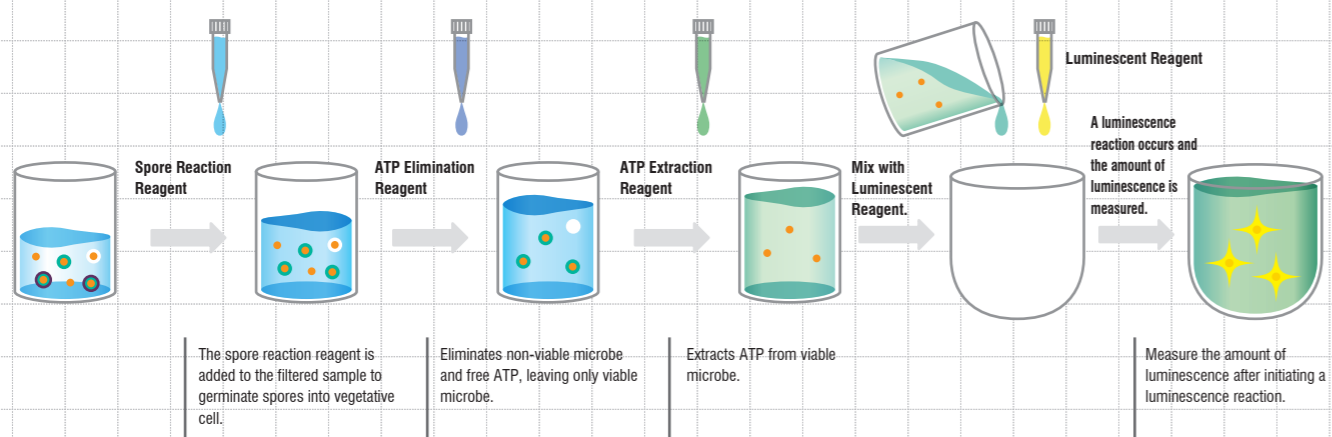
Measurements Independent of the Type of Microbe

Since all organisms utilize ATP, it can be measured regardless of whether the sample contains bacteria, mold, or yeast. With the germination process included, bacteria that are in the spore state can also be measured.



Only ATP from Viable Microbes is Measured

As the ATP elimination process eliminates free ATP and ATP from non-viable microbes, only viable microbes are measured.

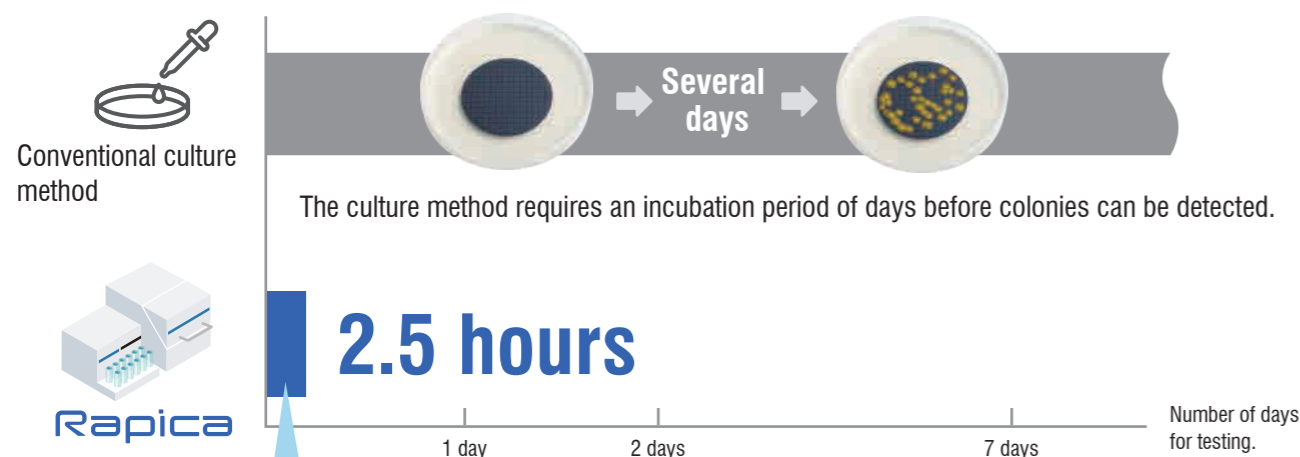


Astonishing test speed. A new world of microbiological testing made possible with Rapica.

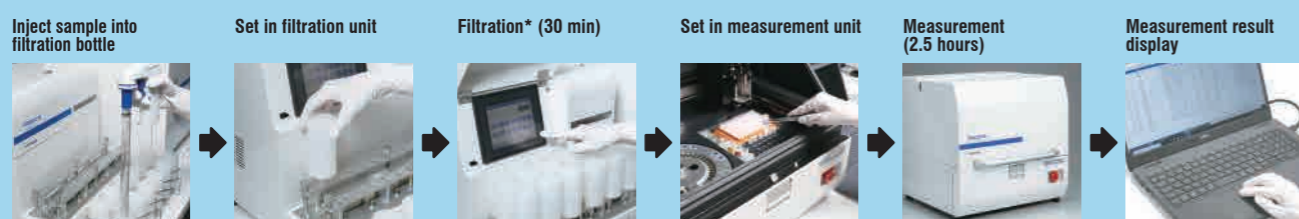


Rapica measurement completed in 2.5 hours.

With Rapica, testing time is greatly reduced when compared to conventional culture methods, with results available on the same day in approximately 2.5 hours.



Automatic Execution from Sample Injection to Measurement



*Automatic suction filtration automatically stops when filtered down to 0.1 mL.

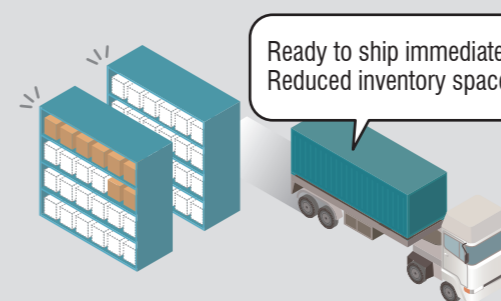
1 Rapica helps prompt manufacturing site setups

After cleaning or modifying production equipment, or at start-up after dealing with microbial contamination, it will be necessary to wait to resume production until the results of the microbial tests are available. With Rapica, test results will be available on the same day, allowing for early resumption of production and more days of production than previously possible.

The results of the previous section are available. It is safe to manufacture now.



2 Rapica enables minimal delivery at the manufacturing site



Ready to ship immediately!
Reduced inventory space!

With Rapica, test results are available on the day of testing, reducing the number of inventory items waiting to be tested. In addition, products with a short post-manufacturing lifespan can be delivered to consumers immediately, contributing to the provision of new values such as safety and security.

3 Rapica supports preventive facility contamination management

In environmental microbiological monitoring, microbes can increase over the course of days while waiting for test results. With Rapica, results are available on the day of sampling, allowing for the detection of trends in microbial deviation, preventing contamination before it occurs.

