

**QUALITEST**  
ADVANCED TESTING TECHNOLOGIES



**QUALITEST™**

# Microbial Growth Curve Analyzer



## STANDARDS

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CLSI M07  
ISO 20776-1  
ISO 21527-1  
ISO 21527-2  
ISO/IEC 17025

## Microbial Growth Curve Analyzer - QualiMGCA™ Basic Series

Microbial Growth Curve Analyzer QualiMGCA™ Basic is an automated microplate-based system that monitors microbial growth in real time and generates growth curves without repeated manual sampling. It combines controlled incubation, orbital shaking, and absorbance-based detection to track cell density trends across many wells in parallel.

The workflow reduces contamination risk because cultures stay sealed in the plate throughout the run. With two plate positions and flexible plate formats, it supports high-throughput comparative studies across media, temperature, and light conditions.

QualiMGCA™ Basic is designed for labs that need repeatable growth kinetics data across many conditions in one run. It measures absorbance/optical density across a broad wavelength range and captures time-series readings at user-defined intervals. Automated shaking improves mixing consistency and helps stabilize.

OD600 readings for organisms that settle quickly. The system is built for long, unattended experiments and can run extended incubations while continuously recording data. It outputs growth curves that simplify comparisons between strains, media recipes, and incubation profiles.

## APPLICATIONS

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# Microbial Growth Curve Analyzer - QualiMGCA™ Basic Series Applications

## High-throughput growth kinetics screening

Run side-by-side comparisons of multiple strains or conditions in 96-, 48-, 24-, or 12-well plates. Two plate positions support parallel datasets, which helps when you need controls and test groups measured under identical timing. This is useful for media optimization, stress testing, and comparative performance checks.

## Media and formulation optimization

Quantify how nutrient composition, additives, and concentration changes affect lag time, growth rate, and stationary-phase behavior. Automated intervals and stable incubation let you build consistent datasets for R&D decisions and tech transfer.

## Strain comparison and selection

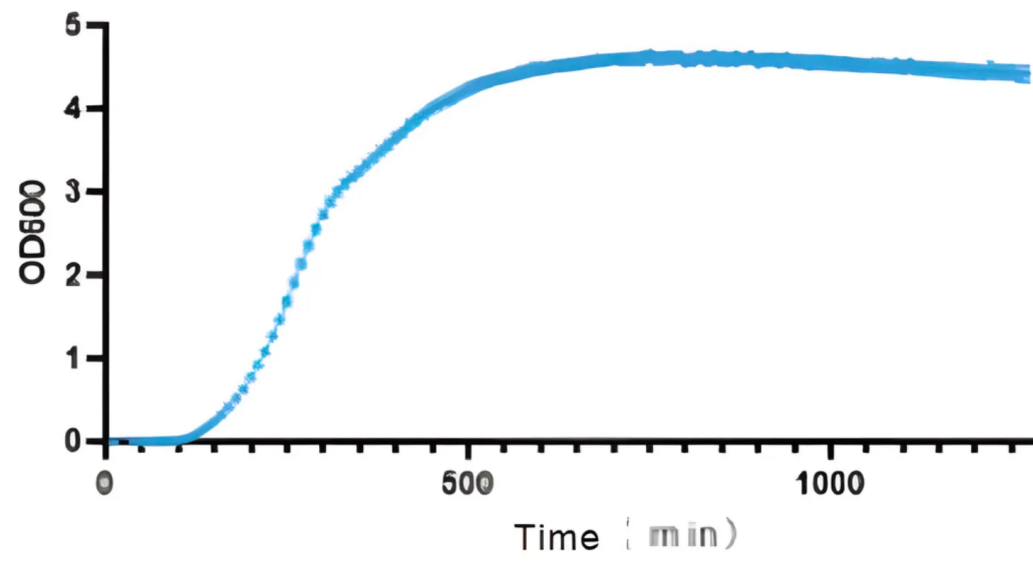
Track growth curves for bacteria and yeast models to identify the best-performing candidates under defined conditions. Consistent shaking supports organisms that settle or aggregate, improving curve repeatability across wells.

## Long-duration cultivation studies

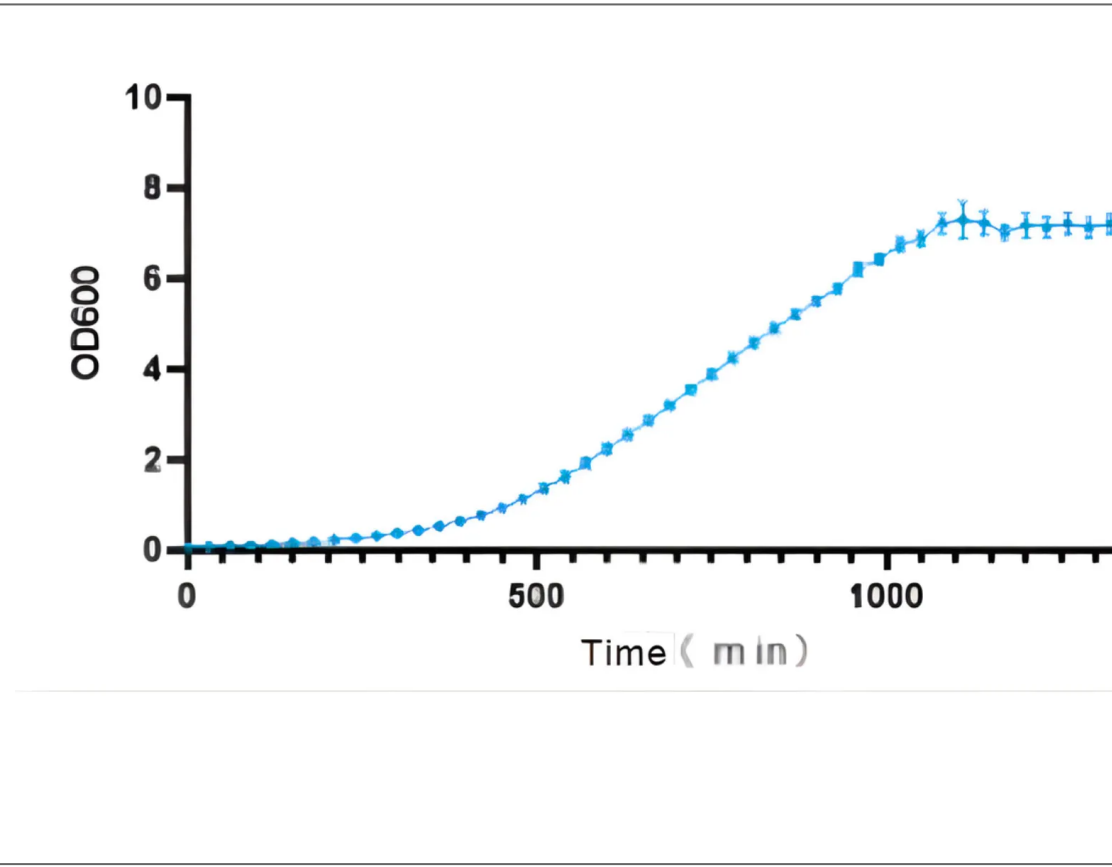
Support extended monitoring when you need multi-day trend data, such as slow growers or process-like incubation profiles. Long maximum operating duration enables fewer interruptions and cleaner time-series records.

Microorganism	Type	Cell Morphology	Size (µm)	Key Characteristics	Graph
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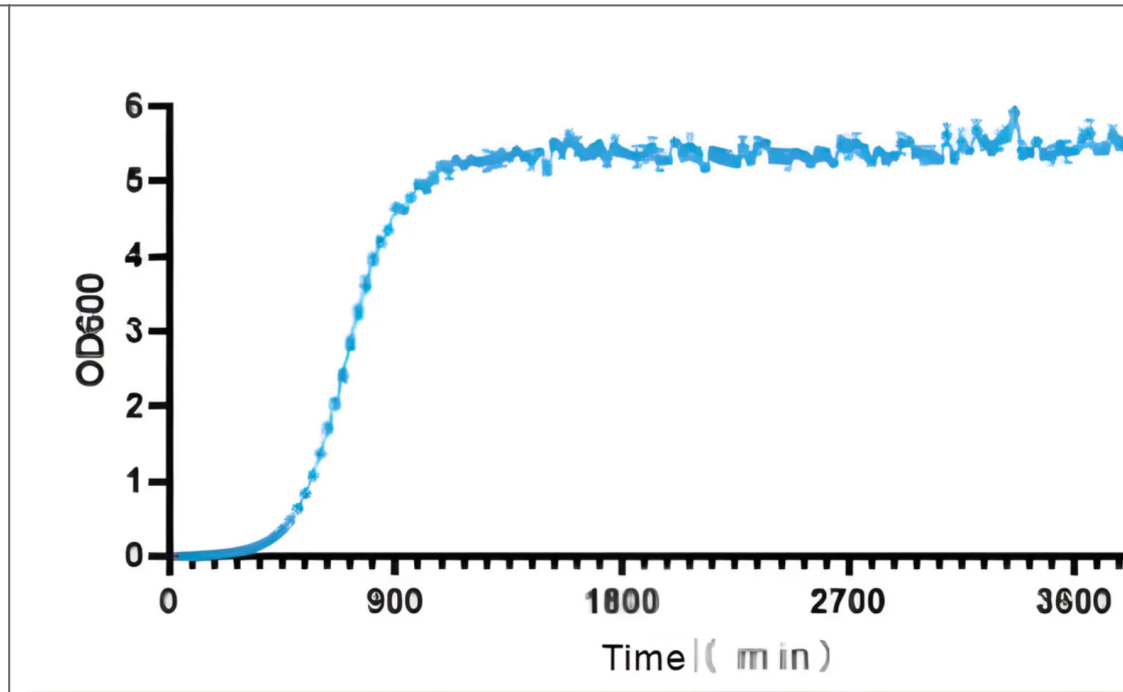
Escherichia coli	Gram-negative	Short bacillus (rod)	0.5 × 1-3	Common lab microorganism; motile with peritrichous flagella; non-spore-forming.
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Fission yeast ( <i>Schizosaccharomyces pombe</i> )	Eukaryote (yeast)	Yeast cells	4-5 × 8-15	Widely used model for cell division; settles easily; typically needs higher mixing speed.
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Lactobacillus rhamnosus	Gram-positive	Rod-shaped	0.8-1.0 $\times$ 2-4	Anaerobic, acid-tolerant probiotic; non-spore-forming; often cultured statically; can aggregate; low-speed rotation in MGC-200 helps reduce clumping.
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## Standards

- ISO 20776-1: Broth micro-dilution reference method for antimicrobial susceptibility testing (MIC workflows in microplates).
- CLSI M07: Dilution antimicrobial susceptibility tests for bacteria that grow aerobically (commonly paired with microplate-based growth/response studies). QualiMGCA™
- ISO 21527-1 / ISO 21527-2: Enumeration of yeasts and moulds in food/feed matrices (useful when your application is food microbiology and you need method references for organism handling and reporting).
- ISO/IEC 17025 (lab quality system): Often referenced for measurement competence and traceable lab practice when reporting quantitative results.

## FEATURES

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### **Microbial Growth Curve Analyzer - QualiMGCA™ Basic Series Key Features**

- Automated, unattended growth monitoring that reduces manual sampling and lowers contamination exposure during long runs.
- Broad wavelength coverage (300–850 nm) to support common OD and absorbance-based microbial assays across visible and near-UV ranges.
- Multi-point, single-well reading approach designed to improve repeatability versus center-only readings on challenging samples.
- High-speed orbital shaking up to 1250 rpm for effective mixing in small volumes and for organisms that settle quickly.
- Two plate positions, up to 192 channels to increase throughput and support comparative experiments in one run.
- Long-run capability (up to 1,600 hours) for extended kinetic studies and multi-day monitoring.
- Built-in UV sterilization, alarms, and user permissions for practical lab operation and traceable workflows.
- Pro model options for gas monitoring/control and lighting when your workflow needs CO<sub>2</sub>/O<sub>2</sub> management or illumination studies.

## THEORY & METHOD

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### Theory and Method

A Microbial Growth Curve Analyzer measures how microbial population density changes over time by tracking optical density (absorbance/turbidity) in each well. As cells multiply, the culture scatters and absorbs more light, increasing the OD signal within a usable range. The instrument reads the plate repeatedly at set time intervals and converts those time-series measurements into growth curves. Orbital shaking improves homogeneity, which helps stabilize readings for settling or aggregating organisms. The result is a consistent kinetic dataset for comparing growth rates, lag phases, and condition-to-condition differences.

## TECHNICAL SPECIFICATIONS

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### Microbial Growth Curve Analyzer - QualiMGCA™ Basic Series Technical Specifications

#### Full model lineup

Specification	QualiMGCA™ Basic 100	QualiMGCA™ Pro 200
Dimensions (W × D × H)	510 × 655 × 350 mm	510 × 655 × 350 mm
Detection wavelength	300–850 nm	300–850 nm
Culture container	Cell culture plate / ELISA plate	Cell culture plate / ELISA plate
Plate positions / channels	2 plate positions, up to 192 channels	2 plate positions, up to 192 channels
Max culture medium volume	2.5 mL	2.5 mL

Specification	QualiMGCA™ Basic 100	QualiMGCA™ Pro 200
Light source	Xenon lamp	Xenon lamp
Temperature control range	15–60 °C (at room temp 25 °C)	15–60 °C (at room temp 25 °C)
Shaking speed	200–1250 rpm	200–1250 rpm
Detection method	Single-hole multi-point detection	Single-hole multi-point detection
Absorbance range	Max 8.0 OD	Max 8.0 OD
Detection interval	5–360 minutes (settable)	5–360 minutes (settable)
Longest incubation time	1,600 hours	1,600 hours
Authority management	Sub-user + admin permissions	Sub-user + admin permissions
Sterilization module	UV sterilization	UV sterilization
Operation failure alarm	✓	✓
Full spectrum scan	✓	✓
Thermal lid anti-condensation	✓	✓
Humidity monitoring	✓	✓
Mid-way temperature change	✓	✓
Reference channel selection	✓	✓
CO <sub>2</sub> concentration detection	✗	✓
O <sub>2</sub> concentration detection	✗	✓
Gas control	✗	✓
Lighting function	✗	✓



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