

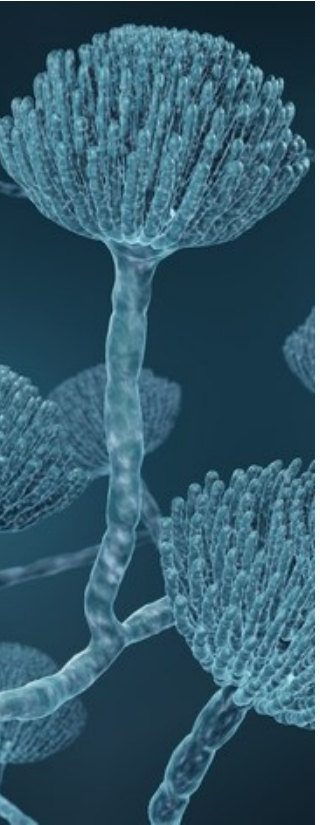


Streamline microbial QC testing using MicroQuant™ by ATCC

Nilay Chakraborty, PhD, MBA
BioNexus Foundation Principal Scientist,
Cryobiology, ATCC

October 24, 2024

Credible Leads to Incredible™



Speaker information



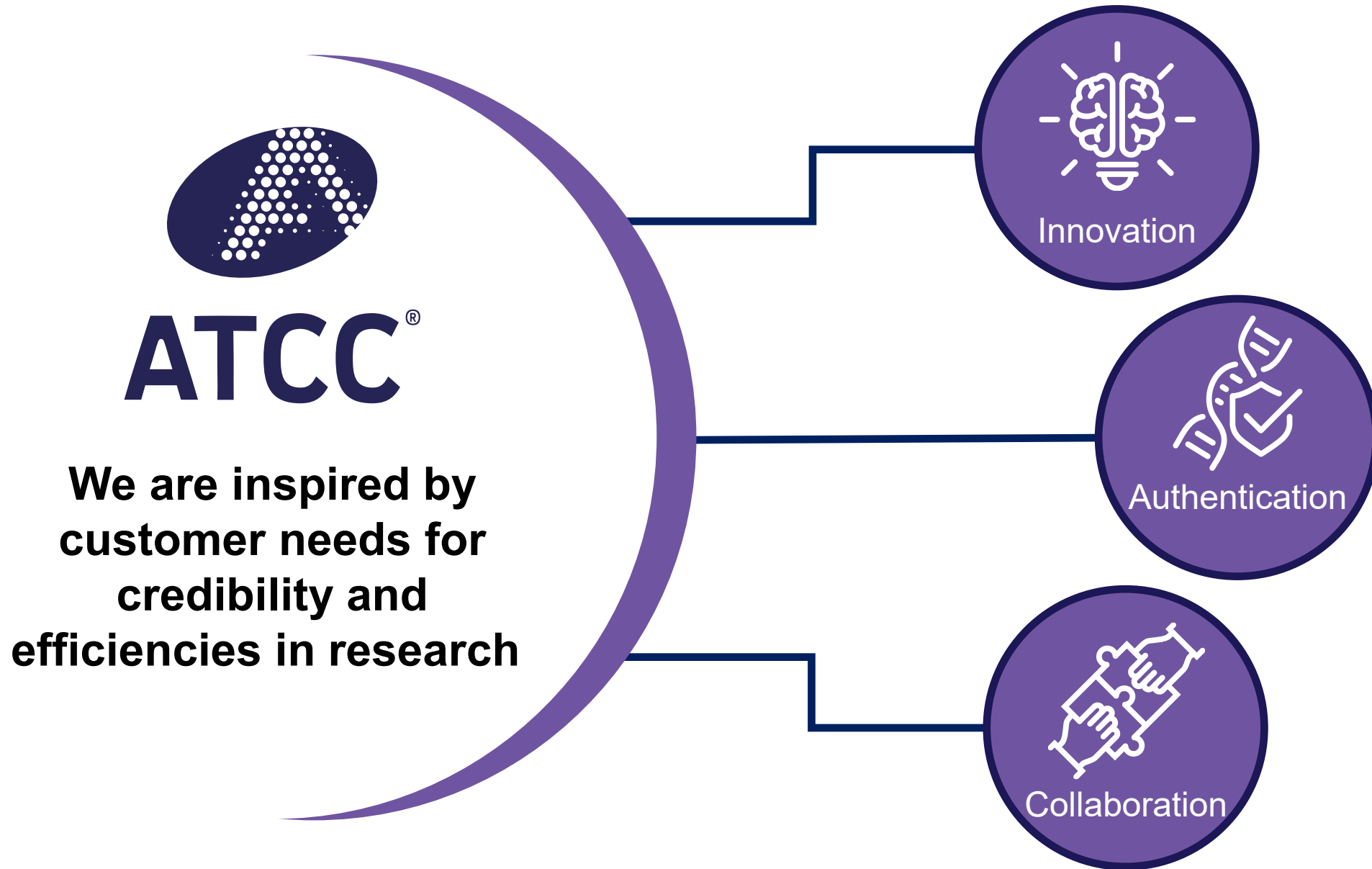
Nilay Chakraborty, Ph.D.
BioNexus Foundation Principal Scientist
Cryobiology
ATCC

Dr. Chakraborty specializes in biopreservation and innovative product development. With an engineering background and degrees from Indian Institute of Engineering Science and Technology and University of North Carolina, he pioneered biopreservation and cell-based technologies that focuses on innovative delivery formats. During his tenure at the Center for Engineering in Medicine at Harvard Medical School, Massachusetts General Hospital, and Shriners Burns Hospital, he continued research in biopreservation, delivery formats, and cell-based technologies. Previously a tenured Associate Professor at the University of Michigan, Dearborn, he now leads ATCC's efforts in preservation sciences and advanced strategic biological product development.

About ATCC®

- Founded in 1925, ATCC® is a non-profit organization with HQ in Manassas, VA, and an R&D and Services center in Gaithersburg, MD
- World's premier biological materials resource and standards development organization
 - 5,000 cell lines
 - 80,000 microorganisms
 - Genomic & synthetic nucleic acids
 - Media/reagents
- ATCC® collaborates with and supports the scientific community with industry-standard biological products and innovative solutions
- Growing portfolio of products and services
- Sales and distribution in 150 countries, 20 international distributors
- Talented team of 600+ employees, over one-third with advanced degrees

Enabling scientific progress for nearly 100 years



Innovative products for life science research



Biologics production



Cell & gene therapy development



Vaccine development

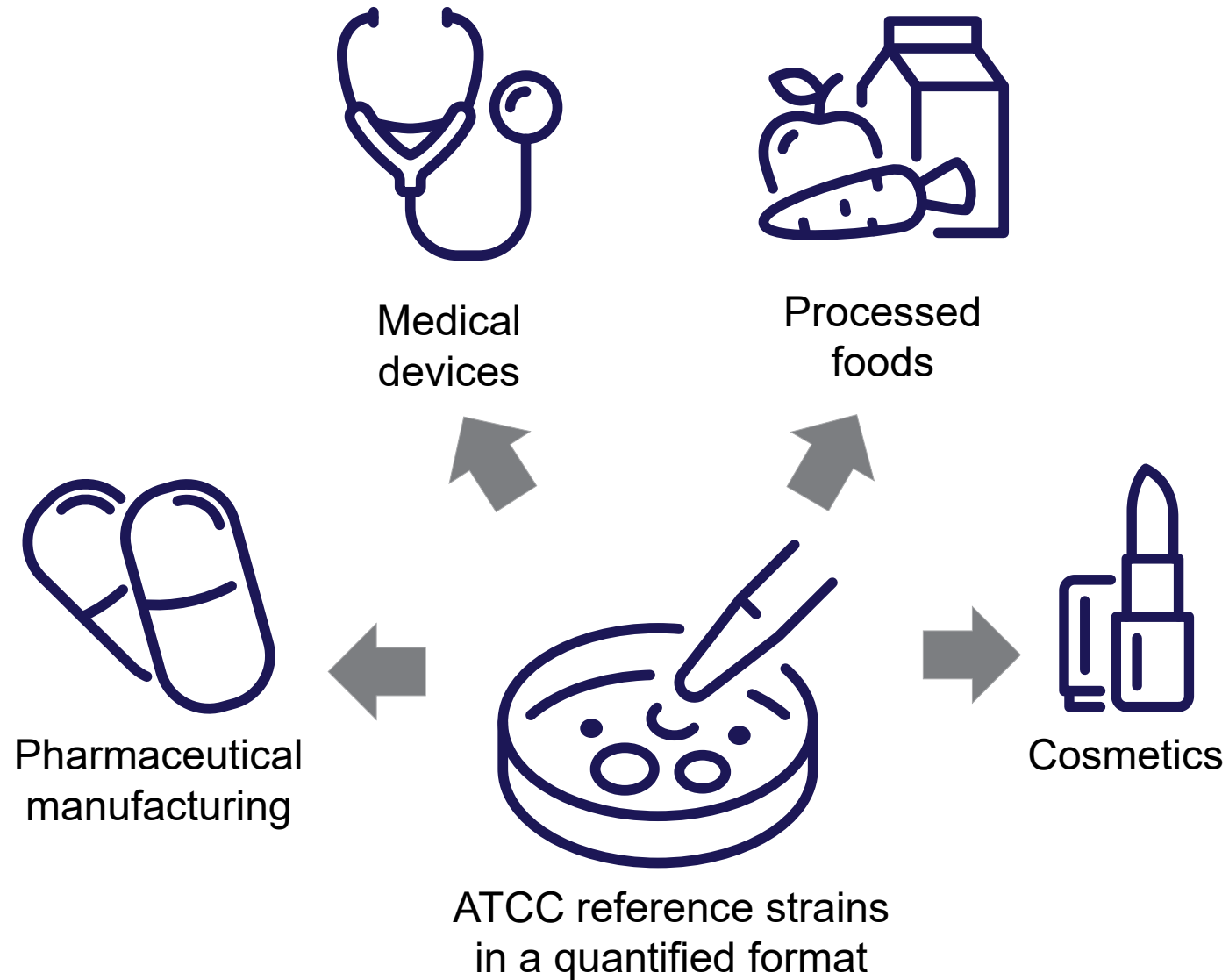


Quality & safety testing

Comprehensive collection of advanced cell models and microbial reference materials that support biologics production

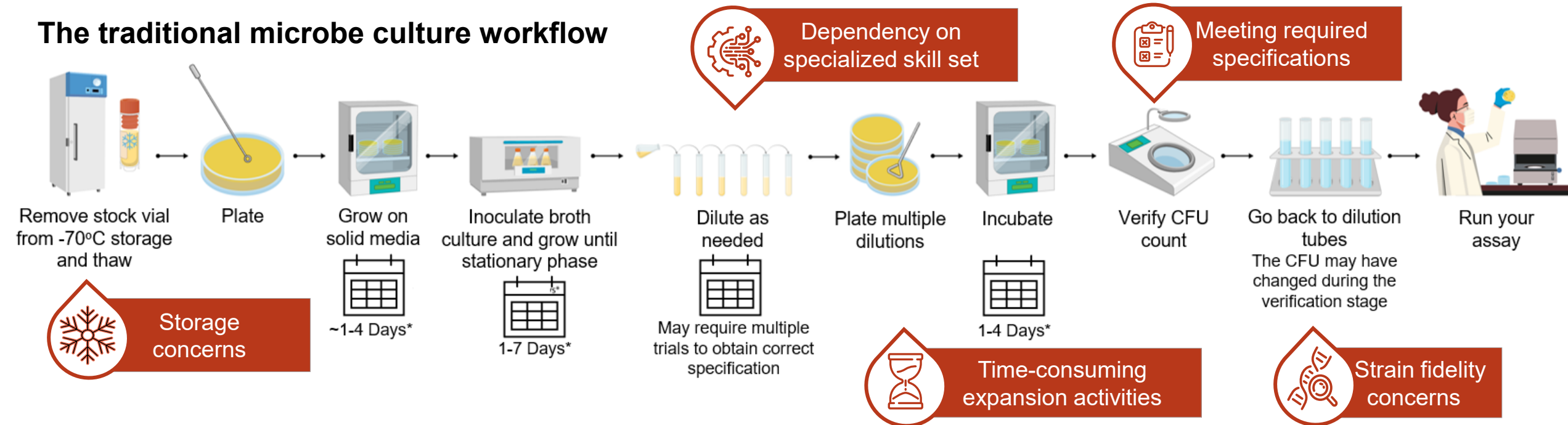
- Bioproduction cell lines and cell lines for enhanced virus production
- Analytical reference materials for residual host cell DNA testing
- Viral reference materials for evaluating the dose and potency of gene therapy products
- Purified polysaccharides and infectious disease strains for vaccine development
- Microbial quality control strains specified in standards and guidelines by organizations and regulatory agencies (USP, EP, ISO, FDA, CLSI, USDA, ASTM, AOAC, WHO)

Microbial QC testing applications span several industries



Challenges when using microbial reference strains

The traditional microbe culture workflow

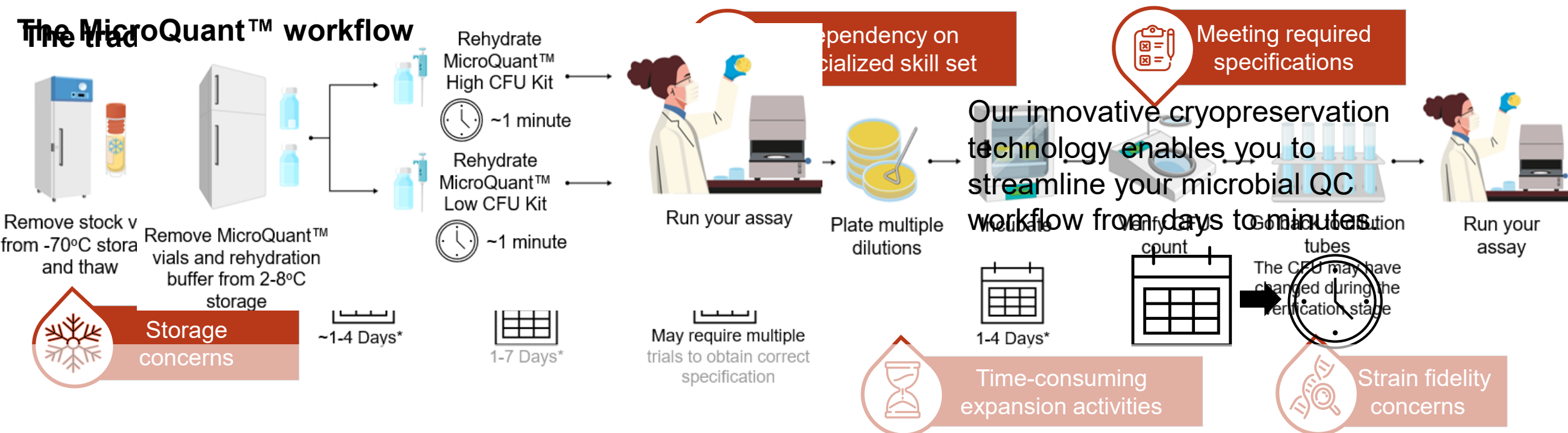


*Different species require varying incubation times

MicroQuant™
by ATCC®



Simplified workflow using MicroQuant™



Meeting the challenge through cryobiology

ATCC developed an innovative preservation technique that delivers:

- A stable pelleted format that uniformly and rapidly rehydrates
- Precise quantitation of biological materials
- Convenient storage in refrigeration



Introducing MicroQuant™ by ATCC®

Precision in every pellet, trust in every test

A ready-to-use solution to help you streamline microbial QC testing

- Precisely quantitated in high-titer and low-titer pelleted formats
- Single-use format using an innovative, proprietary preservation technology
- Rapid, uniform rehydration in less than a minute
- Easy to store and ready to use anytime—no need to thaw
- Original ATCC materials manufactured under ISO 17034



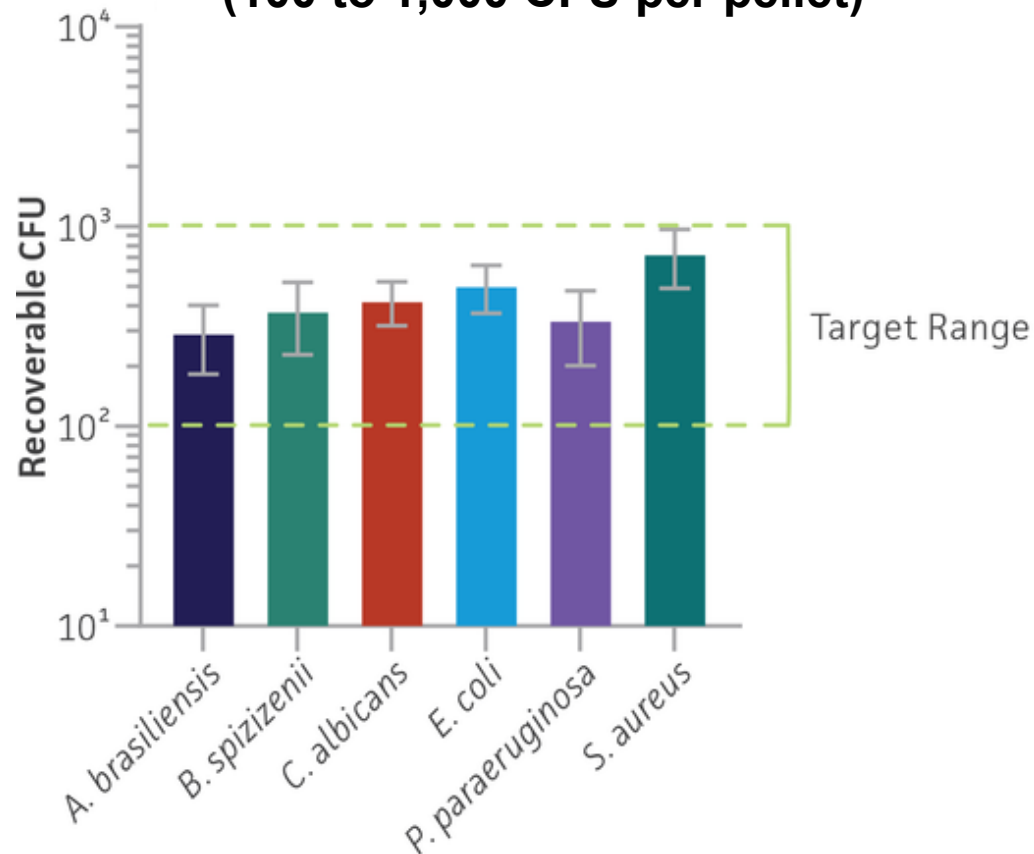




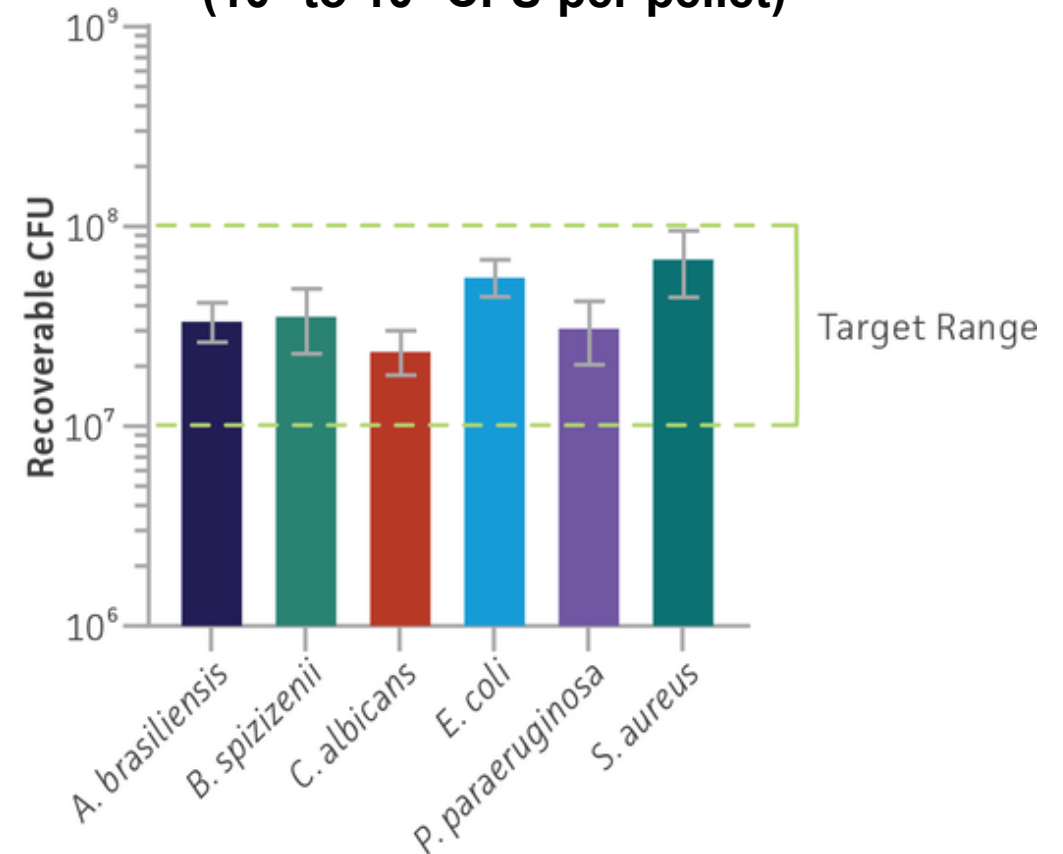
Save time and eliminate process complexities

MicroQuant™ is provided as a single-use quantitated pellet that enables fast assay set up and minimizes handling.

**Low CFU Items
(100 to 1,000 CFU per pellet)**

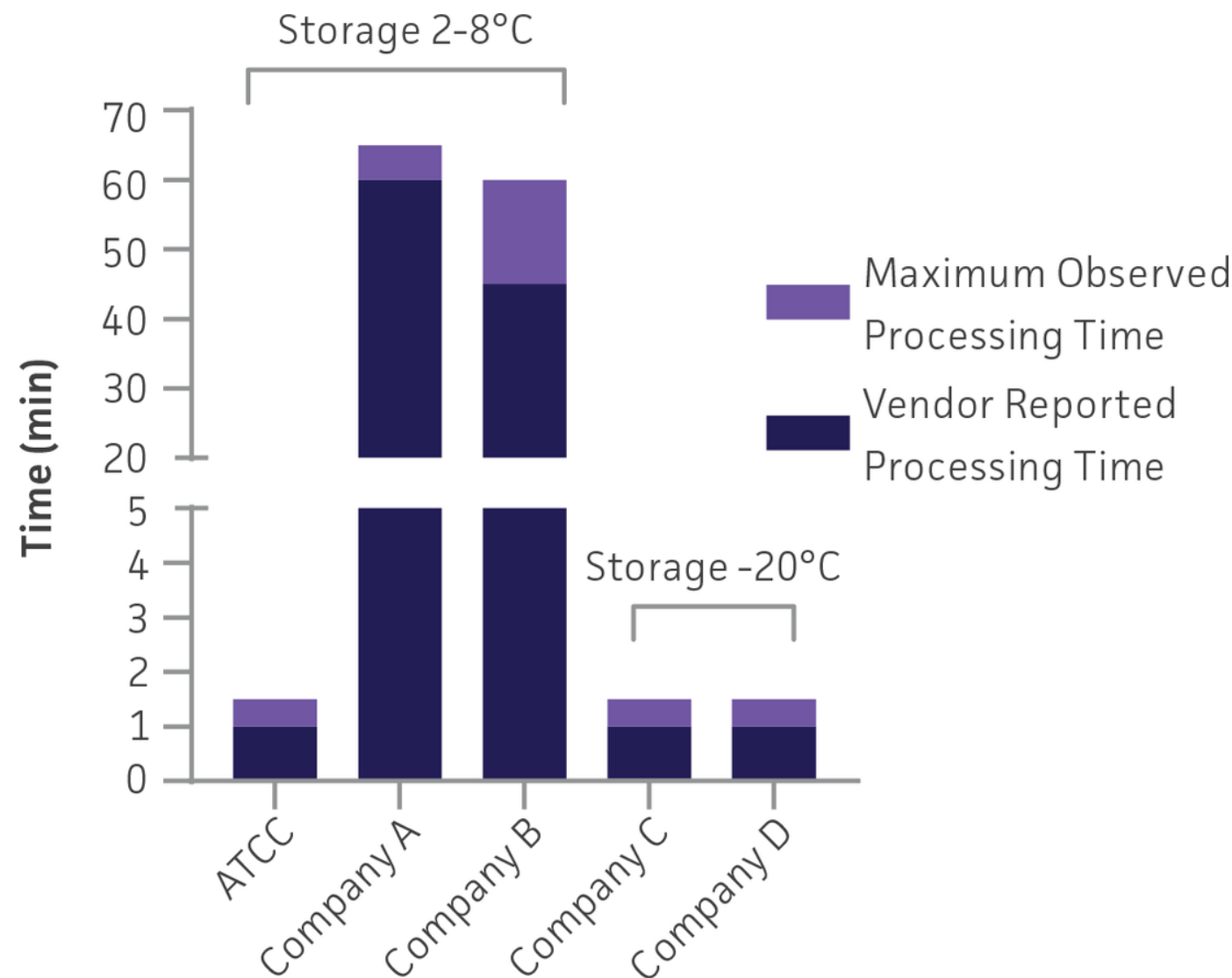


**High CFU Items
(10⁷ to 10⁸ CFU per pellet)**



Maximize your resources

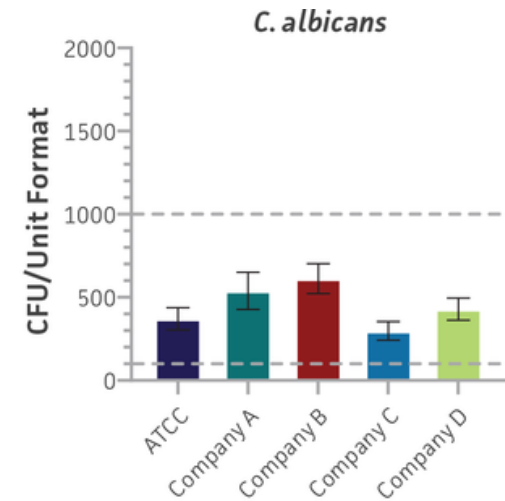
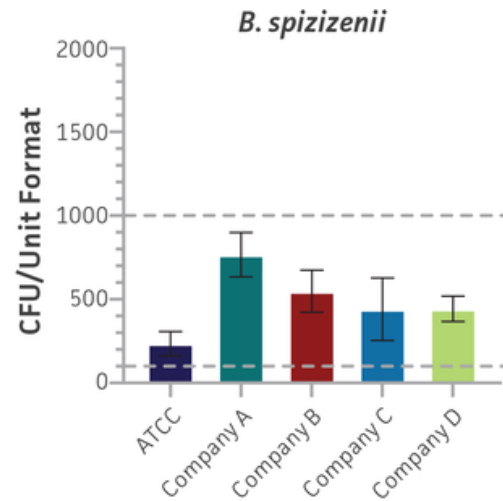
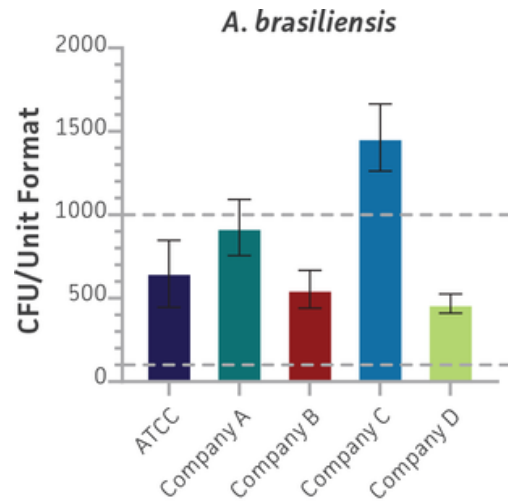
MicroQuant™ is stable at 2-8°C, making it convenient to store and ready to use anytime



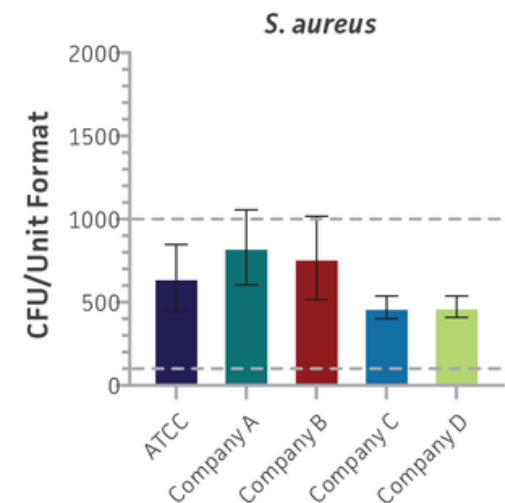
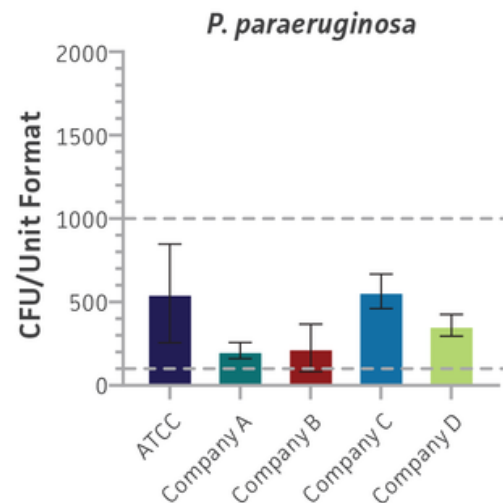
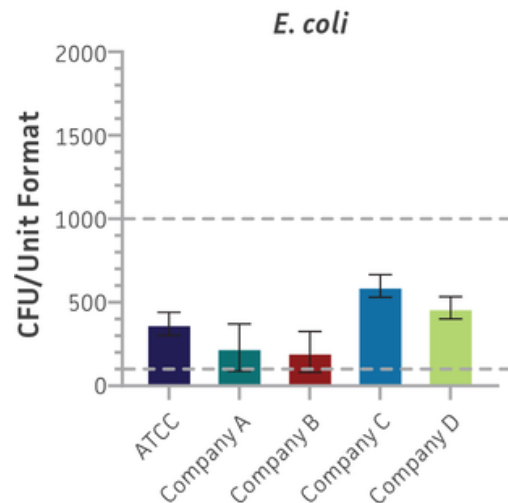
No need to thaw!

Rely on consistent, precise quantitation

MicroQuant™ - Precise and accurate low CFU pellets for bioburden testing



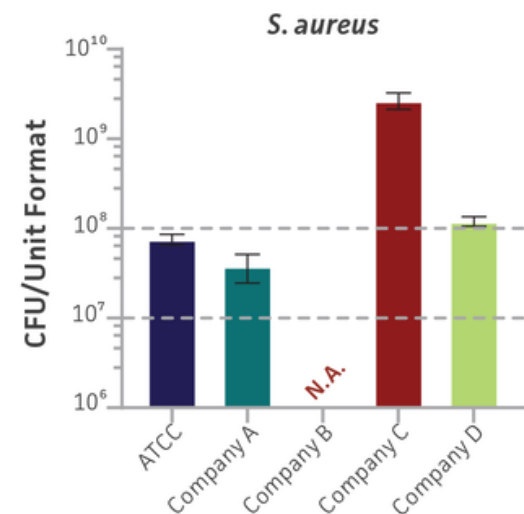
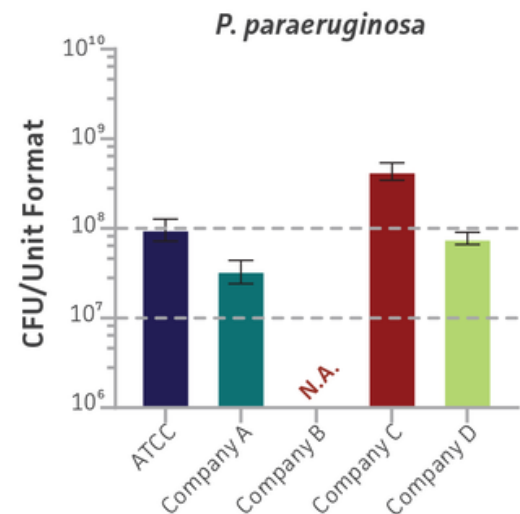
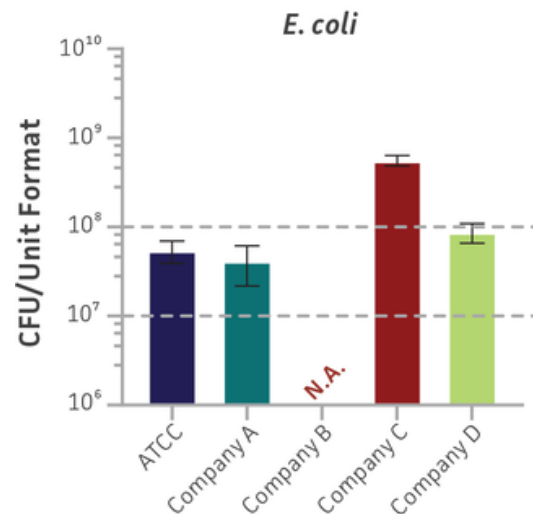
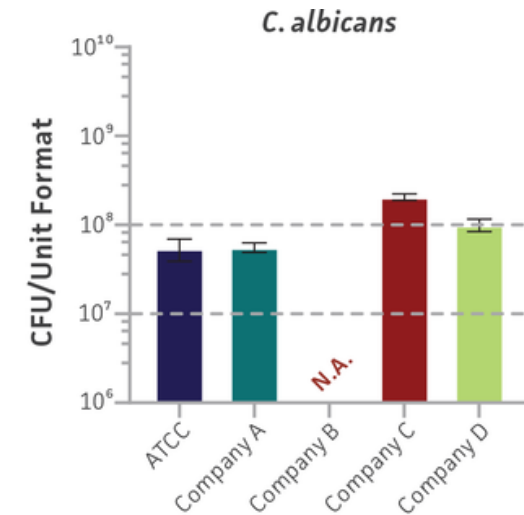
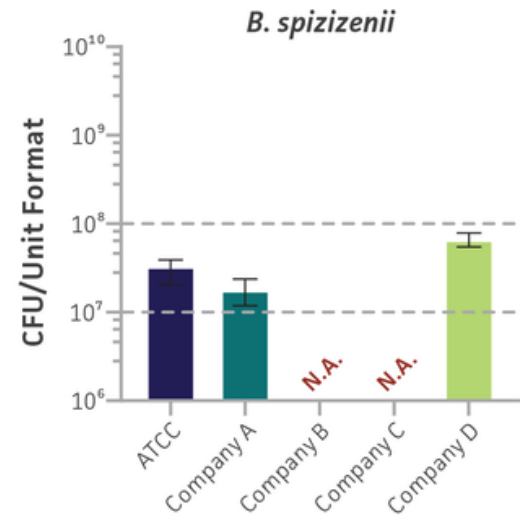
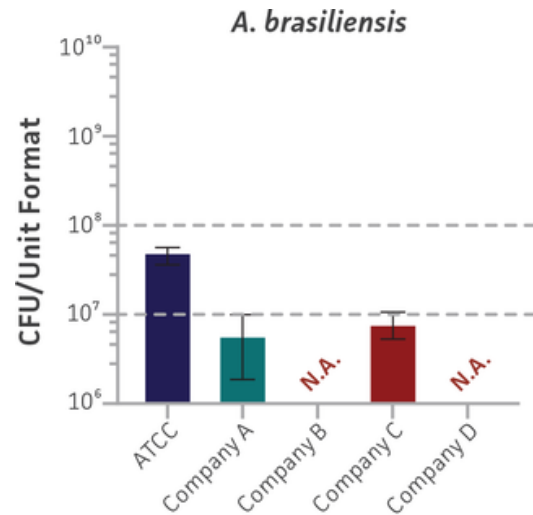
"Low CFU"
means
100 to 1,000
CFU/pellet



Rely on consistent, precise quantitation

MicroQuant™ - Precise, high CFU pellets for testing under USP <51> guidelines

"High CFU"
means
 10^7 to 10^8
CFU/pellet



How MicroQuant™ compares to similar products

| Features | MicroQuant™ | Company A | Company B | Company C | Company D |
|---|-------------|-----------|-----------|-----------|-----------|
| Processing time ~1 minute | ✓ | | | ✓ | ✓ |
| 2-8°C refrigeration storage | ✓ | ✓ | ✓ | | |
| Manufactured under ISO 17034 | ✓ | ✓ | ✓ | ✓ | ✓ |
| Includes all strains for USP <51> (High CFU format) | ✓ | ✓* | | ✓* | ✓* |
| Includes all strains for USP <61> (Low CFU format) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Product kit includes rehydration buffer | ✓ | ✓ | ✓ | ✓ | |
| Sourced from ATCC | ✓ | ✓ | ✓ | | |

*Some strains were not available for purchase at the time of testing

Explore the MicroQuant™ portfolio

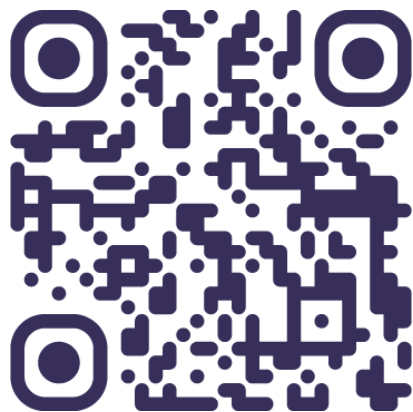
| ATCC® No. | Description |
|----------------|--|
| 10231-LQ-PACK™ | MicroQuant™ <i>Candida albicans</i> , low CFU |
| 10231-HQ-PACK™ | MicroQuant™ <i>Candida albicans</i> , high CFU |
| 9027-LQ-PACK™ | MicroQuant™ <i>Pseudomonas paraeruginosa</i> , low CFU |
| 9027-HQ-PACK™ | MicroQuant™ <i>Pseudomonas paraeruginosa</i> , high CFU |
| 6538-LQ-PACK™ | MicroQuant™ <i>Staphylococcus aureus</i> subsp. <i>aureus</i> , low CFU |
| 6538-HQ-PACK™ | MicroQuant™ <i>Staphylococcus aureus</i> subsp. <i>aureus</i> , high CFU |
| 16404-LQ-PACK™ | MicroQuant™ <i>Aspergillus brasiliensis</i> , low CFU |
| 16404-HQ-PACK™ | MicroQuant™ <i>Aspergillus brasiliensis</i> , high CFU |
| 8739-LQ-PACK™ | MicroQuant™ <i>Escherichia coli</i> , low CFU |
| 8739-HQ-PACK™ | MicroQuant™ <i>Escherichia coli</i> , high CFU |
| 6633-LQ-PACK™ | MicroQuant™ <i>Bacillus spizizenii</i> , low CFU |
| 6633-HQ-PACK™ | MicroQuant™ <i>Bacillus spizizenii</i> , high CFU |

Low CFU = 100 to 1,000 CFU/pellet

High CFU = 10⁷ to 10⁸ CFU/pellet



Learn more about MicroQuant™



ATCC.org/MicroQuant



Explore our portfolio




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MicroQuant™



Best-in-class controls for pharmaceutical testing

MicroQuant™ – Precision in every pellet, trust in every test

MicroQuant™ is ATCC's new product line of precisely quantitated microbial reference materials used to streamline microbial quality control testing in pharmaceutical manufacturing. Leveraging an innovative cryopreservation technology, MicroQuant™ products come in the form of stable, rapidly rehydrating pellets that deliver consistent quantitation and accurate, reproducible results—addressing the key challenges faced by microbial testing laboratories. This novel product suite enables simplified workflows and quick turnaround times while adhering to strict quality standards. With nearly a century of enabling scientific progress, this new ATCC offering represents the latest step in empowering innovation, collaboration, and trust through industry-leading microbial testing solutions.

EXPLORE THE MICROQUANT™ PORTFOLIOVIEW FAQs

Streamline microbial QC testing

- **Precisely quantitated:** Products are available in high-titer (10^7 to 10^8 CFU per pellet) and low-titer (100 to 1,000 CFU per pellet; 10 assays) formats to meet USP General Chapter requirements. Our precise quantitation across batches ensures lot-to-lot consistency.
- **Single-use format:** Our ready-to-use format enables fast assay setup and reduces the need for special handling knowledge and maintenance of expansive microbial cultures.
- **Immediate rehydration at room temperature:** With a processing time of a minute, you can reduce your hands-on time while improving efficiency.
- **Convenient storage at 2-8°C:** MicroQuant™ products are stable in refrigerator temperatures for up to 6 months, making them easy to store and ready to use anytime—no need to thaw.
- **Reliable:** Each product is manufactured by ATCC under ISO 17034, so you can trust that you are receiving high-quality, original source material.



Thank You

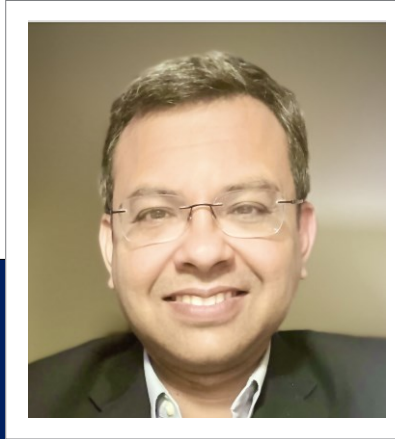
CREDIBLE
MODELS

INCREDIBLE
OUTCOMES



ATCC® | CREDIBLE LEADS TO INCREDIBLE

Let's connect



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