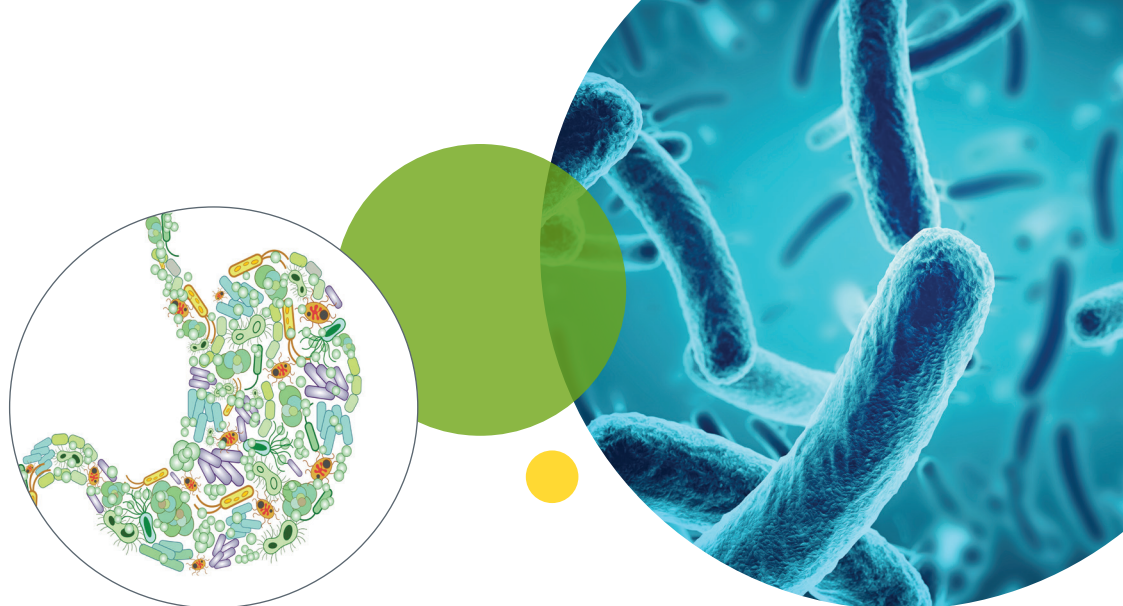# MOLECULAR DEVICES

Colony picking for microbiome studies

MICROBIAL COLONY PICKERS

- Pick colonies objectively with high robotic accuracy and precision
- Avoid cross contamination with a pin sterilization process suitable for any organism
- Broad applications span microbiome, synthetic biology, metagenomics, blue/white colony screening, and more

WHAT IS THE MICROBIOME?

The microbiome is the collection of organisms within a particular environment, which constitutes a vast ecosystem of commensal, symbiotic and pathogenic microorganisms. Such an ecosystem exists in our digestive system, composed of a collection of bacteria, yeast, fungi, viruses, and protozoans. There are estimated to be trillions of these microorganisms in humans, most of which play an important role in helping to maintain a healthy gut. Although we have a good understanding of many of these microorganisms, such as *E. coli*, there are a multitude of other organisms that we are only just beginning to understand. The importance of the gut microbiome is emphasized by the NIH's creation of the Human Microbiome Project.
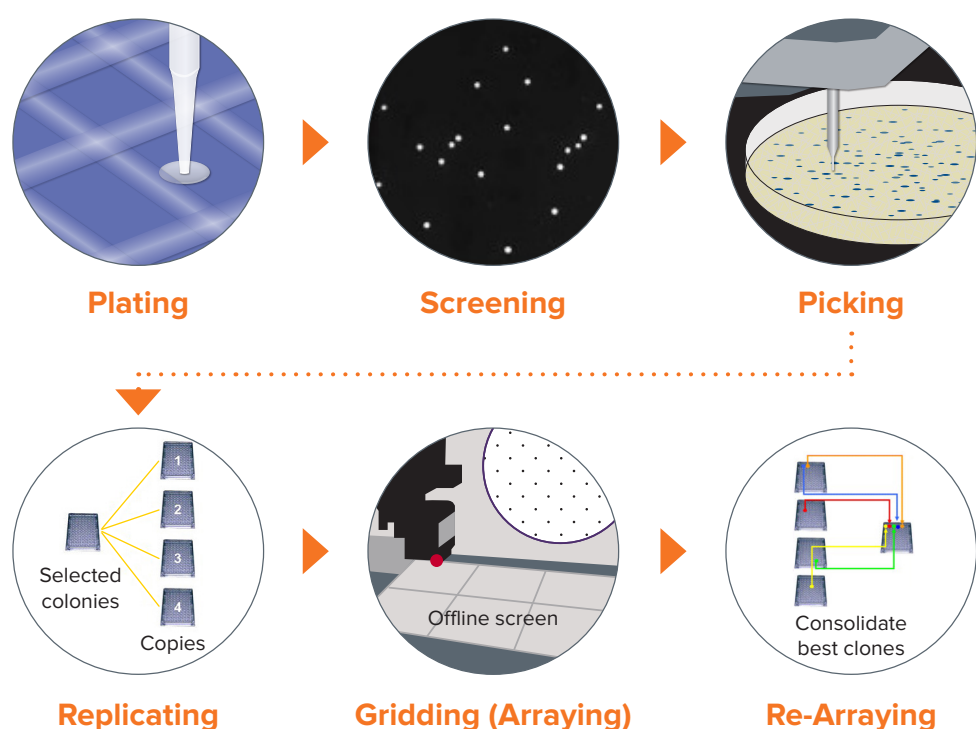
PICKING THE RIGHT COLONIES

Scientists need to grow and pick the right microbial colonies or fungi, making colony picking an essential part of microbiome studies. Traditionally, colony picking is performed manually using sterile pipette tips or inoculation loops, which is usually slow, labor intensive, and time consuming. Automated colony pickers make the entire process quicker (up to 3,000 clones per hour) and the results are more consistent and reliable.
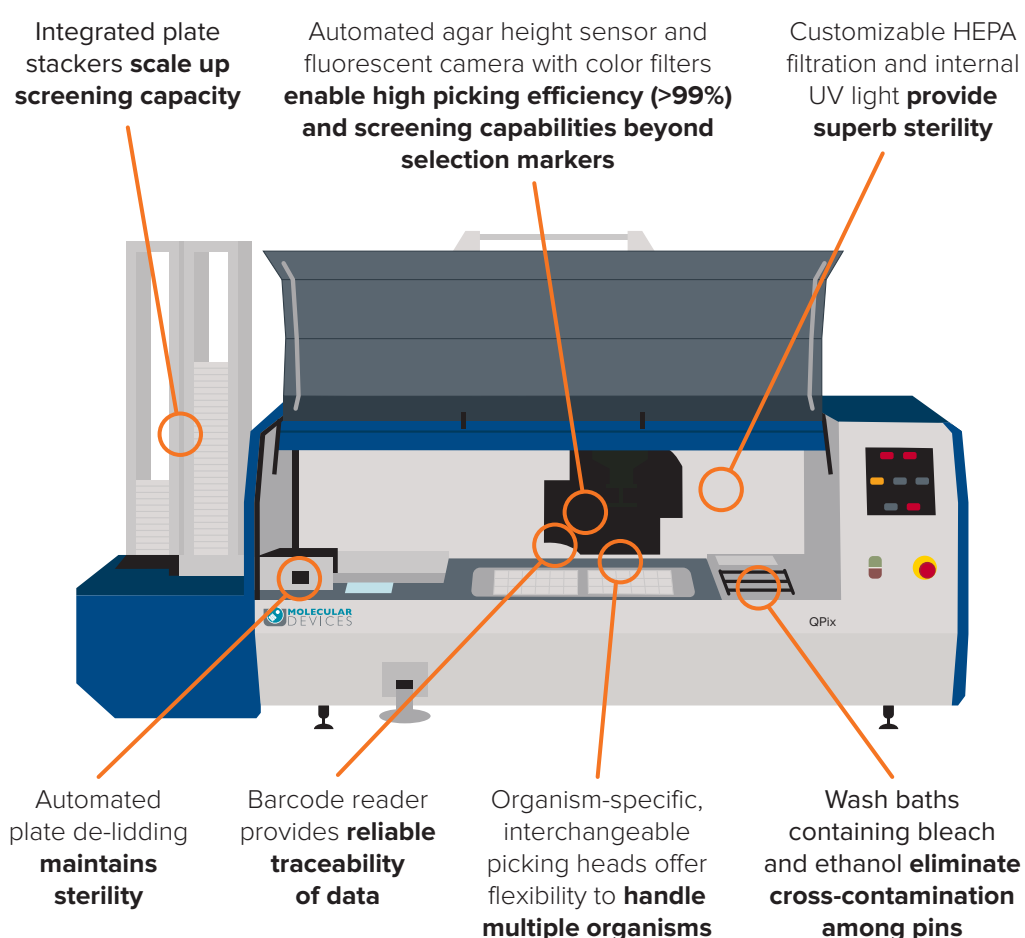
BENEFITS

- Scalable automation to suit your throughput needs, including true walk-away operation and easy setup
- Organism-specific pin heads to ensure maximum transfer of material
- Broad applications range, including fluorescence and liquid handing capabilities
- Electronic data tracking for well-documented data control
- Sterile environment with customizable HEPA filtration options

QPix 400 Series Microbial Colony Pickers

A TYPICAL QPIX MICROBIAL COLONY PICKER WORKFLOW

Plating → **Screening** → **Picking**

Selected colonies / Copies — **Replicating**

Offline screen — **Gridding (Arraying)**

Consolidate best clones — **Re-Arraying**

QPIX 400 SERIES MICROBIAL COLONY PICKERS

Due to the variety of organisms that inhabit our digestive tracts, microbiome studies can benefit greatly from the flexibility and throughput that our QPix automated microbial colony picking system can provide. The QPix system offers you the unique option to simultaneously detect colonies and quantify fluorescent markers in a pre-screening step before picking. Since the microbiome consists of many unknown organisms it can be difficult to know what you are looking for, which is where the colorimetric (blue/white) and fluorescence screening capabilities of the QPix system can help.

If additional functionality is needed, our in-house Advanced Workflow Engineering Solutions (AWES) team can expertly customize our QPix instruments to optimize workflows for your specific needs.

ANATOMY OF A QPIX MICROBIAL COLONY PICKER

Integrated plate stackers **scale up screening capacity**

Automated agar height sensor and fluorescent camera with color filters **enable high picking efficiency (>99%) and screening capabilities beyond selection markers**

Customizable HEPA filtration and internal UV light **provide superb sterility**

Automated plate de-lidding **maintains sterility**

Barcode reader provides **reliable traceability of data**

Organism-specific, interchangeable picking heads offer flexibility to **handle multiple organisms**

Wash baths containing bleach and ethanol **eliminate cross-contamination among pins**

Objective software data analysis and database integration **allow clear and concise record of experimental data**