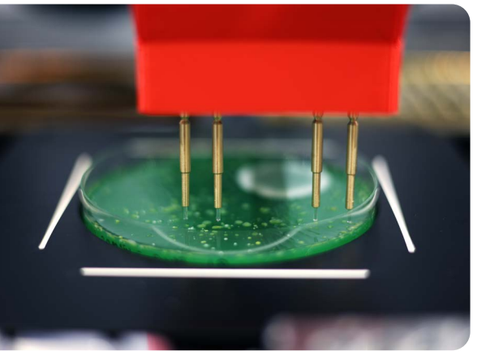
SINGER INSTRUMENTS
A RESPONSIBILITY TO SCIENCE!

P!XL
SERIES

Ultra-precise microbial colony manipulation

Why do I need PIXL Max?



Our fastest colony picker
Pick at speeds of 3000 colonies per hour with uncompromisable sterility and proven accuracy.

Detect & pick any microorganism
One PickupLine to isolate all microorganisms. Tried and trusted. Supported by an AI colony detection algorithm.

Resolve & isolate miniscule morphology
Identify colonies as small as 0.2 mm, capturing every detail. Filter selections by: size, shape, fluorescent intensity, colour, proximity and more.

MALDI-TOF compatible
Pick colonies to Shimadzu and Bruker adapters for BioID through mass spectroscopy.

Detect fluorescence
Six lighting channels for detection of wtGFP, sfGFP, mCherry, tagBFP and Venus markers.

Maintain sterility
Over 180,000 sterile, disposable tips across the six, low-cost PickupLine reels. No wash cycles needed.

Trust your results
Sustain close to 100% picking accuracy with precision agar surface detection on every pick.

AI halo detection
Automatically identify and quantify zones of inhibition with AI. Pick and filter phage, resistant or central colonies by size or proximity.

Train everyone
90% of the functionality can be learned by anyone in as little as 10 minutes. Don't rely on one technician.

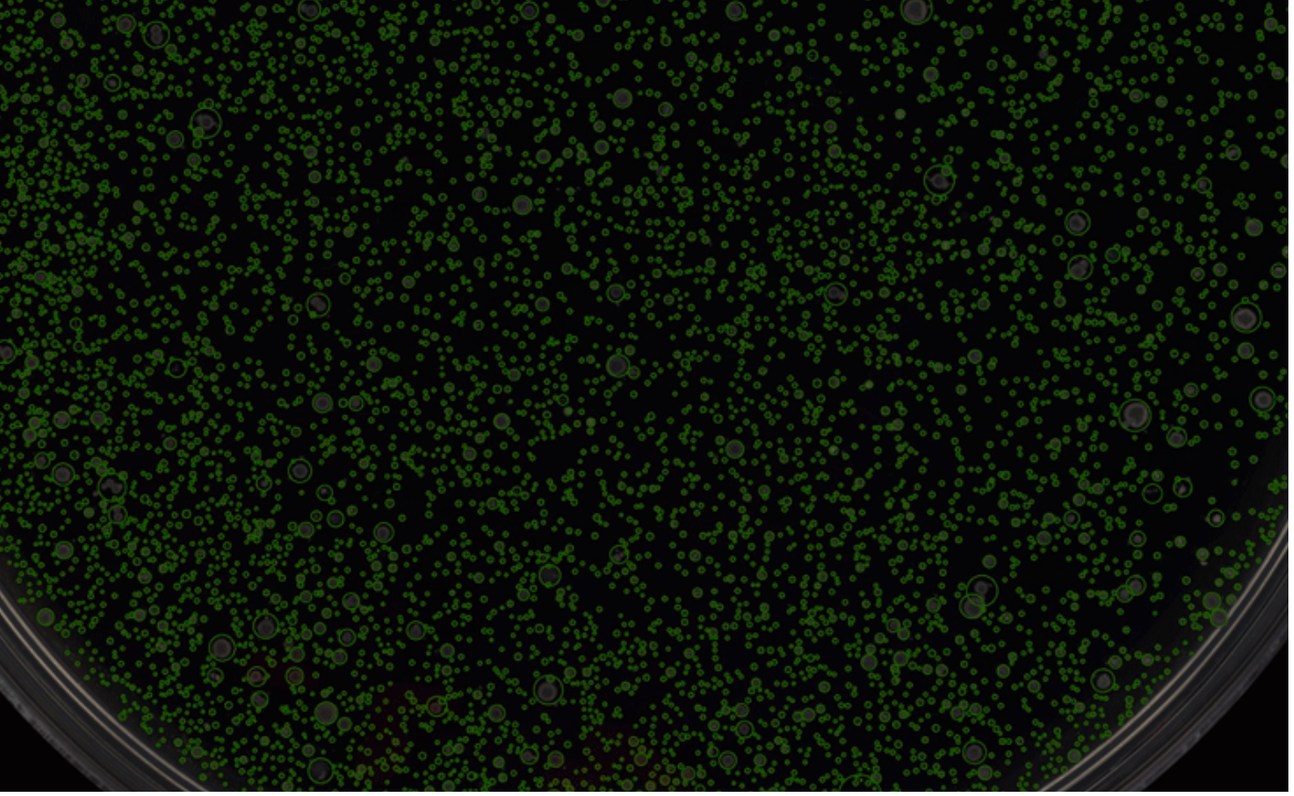
Trace everything
Passworded profiles and automated experimental logging.

What is PIXL Max?

Supercharged PIXL microbial colony picking technology. This is our fastest model yet, built from the ground up with AI colony detection and morphological analysis! All packed into a small footprint.

When precision picking of every colony matters, accuracy and reproducibility are top priority. You need a top of the line colony picker made by engineers who put scientist's needs first.

PIXL Max automates every step: isolate 198,000 different species with no downtime.



PIXL uses specially developed pinpoint technology for a step-change in reliability & sterility

PIXL Max uses the freshly-cut end of a sterile PickupLine to transfer microbial colonies, eliminating the requirement for washing cycles and the associated chance of contamination, at a fraction of the cost of traditional tips. Load the PickupLine reels into PIXL Max to form up to 180,000 sterile, disposable tips. Its cutting-characteristics allow PIXL Max's precision blade to produce a tip perfect for picking anything: bacteria, fungi, archaea or even phage. Trust in PIXL Max's verified 99% colony picking accuracy - whether you know what you're picking or not!

PickupLine: Pick anything reliably.
One solution for all microorganisms

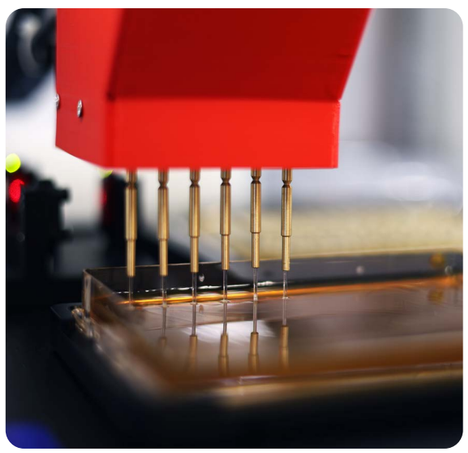
Pick every colony, no detail left behind

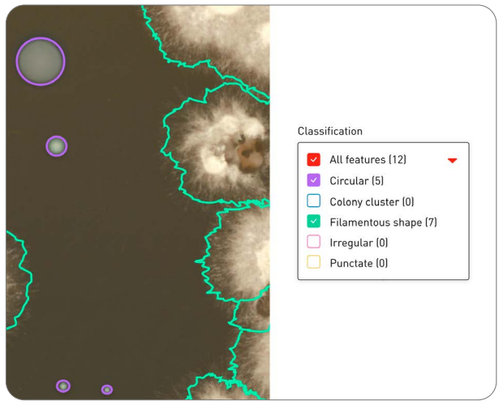
PIXL Max can detect colonies down to 0.2 mm wide and analyse the subtle morphological differences. Our flat-field scientific grade colour camera with incident illumination creates consistently high resolution images across 6 colour channels. This allows our highly trained AI colony detection algorithm to identify, classify and quantify microbial colonies with 99% precision.

But there's no point in detecting tiny colonies if you stamp the microbial matter down into the agar when you go to pick it. The smaller things must always be handled with care - you never know what information might be lost with that single colony. Our Pinpoint picking technologies and agar surface detection before every pick ensure >99% transfer efficiency and next-to-no cross-contamination.

AUSTRALIAN HUMAN MICROBIOME BIOBANK

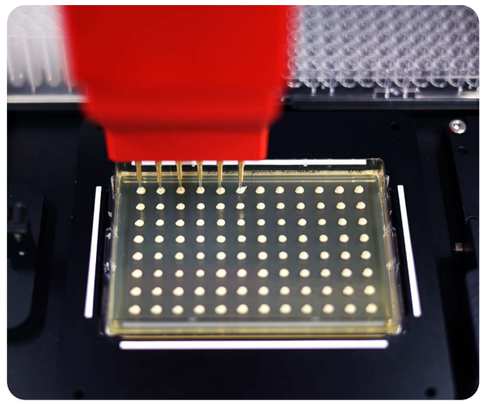
Faced with the monumental task of culturing thousands of oxygen and temperature-sensitive microbial species, many never before seen, the Australian Human Microbiome Biobank (AHMB) needed PIXL for a breakthrough. Manual picking, taking nearly five minutes per colony, is simply not a viable option for their high-throughput needs. The AHMB's Project Manager, Dr. Suzanne McCusker deemed PIXL "essential" because of its ability to pick a 96-well plate in minutes and capture comprehensive colony metadata for unlocking ground-breaking discoveries in the "dark matter" of the human microbiome. Early indications show that close to **half (48.93%) of the 12,500 microorganisms** so far banked - a mixture of gut, skin, mouth and vaginal species - have **never previously been registered to any public database.**





Microbial Identification

PIXL Max AI morphological classification enables you to filter by specific colony morphology. Visualise the minutiae of your colonies in high definition. All made possible with an uber-sharp camera and advanced AI technology. Automatically differentiate and isolate the filamentous, circular or punctate colonies - no need to optimise.



PIXL Max and PIXL+ contain a scientific grade, colour camera and 6-channel, flat-field SpectraStar™ incident illumination to capture high-resolution colony images from petri dishes and rectangular SBS plates. PIXL Max's AI algorithms will automatically detect colonies, quantify phenotypes and allow target selection based on size, morphology, colour intensity, proximity, and fluorescence.

Pinpoint picking technology automatically adjusts to any variation in agar height. PIXL Max detects the surface and regulates the contact pressure for every pick. This ensures that every single colony on your plate is picked, without damaging, missing or splashing cells all over the place. The motors are accurate to 50 microns, to enable selection of colonies down to 0.2 mm wide. To top it off, the picking profiles are adjustable to optimise for colonies of every texture, dry or sticky.

Automate BioID: prepare a 384 array in <10 minutes and identify the microbiome with 99.9% confidence.

Manual MALDI-TOF MS sample preparation, particularly for a large number of samples, can be a time-intensive task. Automating sample preparation with PIXL Max reduces sample processing times while maintaining accurate bacterial identification. Compatible with both Bruker and Shimadzu MALDI-TOF adapter plates.

SHIMADZU
Excellence in Science

"The PIXL is extremely reliable, I haven't had any issues with contamination, breakdown or just any sort of malfunction, it's worked beautifully every time I've needed it. PIXL is a great instrument to have in the lab if you're doing anaerobic work."

Dr Carla Botelho Machado

BRUKER

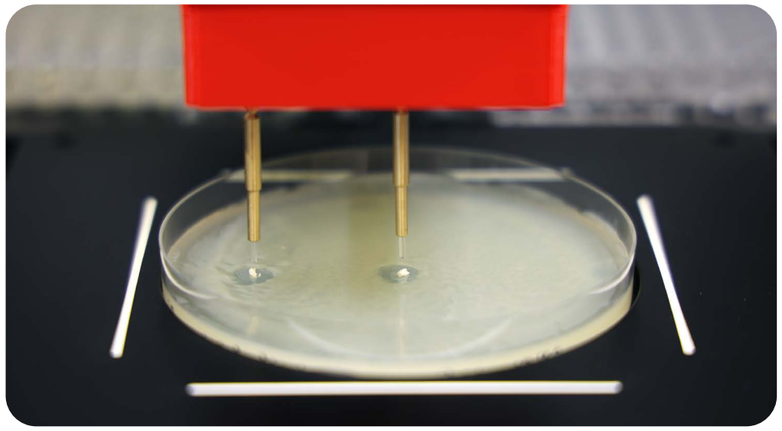
Fluorescence detection

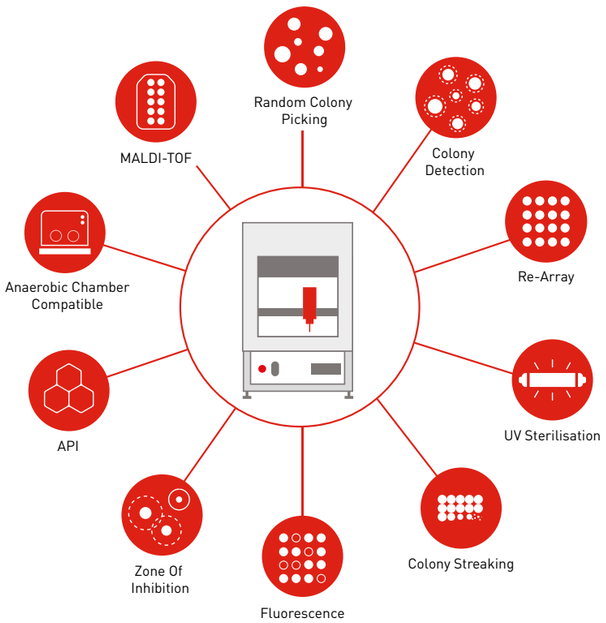
Turn on the fluorescent LEDs, insert the appropriate bandpass filter, and PIXL Max will quantify and allow selection for wtGFP, sfGFP, mCherry, tagBFP, Venus and many other fluorescent markers.

White	Green (520-540 nm)
Blue (465-485 nm)	Violet 1 (480-390 nm)
Cyan (490-510 nm)	Violet 2 (400-410 nm)

Zone of inhibition AI analysis

PIXL Max's new AI zone of inhibition (ZOI) algorithm can detect and measure every feature of your zones of inhibition. Measure both primary and secondary halos. Automate the picking of resistant colonies, or antimicrobial producing microbes. Quantify and isolate from phage plaques. Consistently and reproducibly compare antimicrobial properties across diverse sample plates.



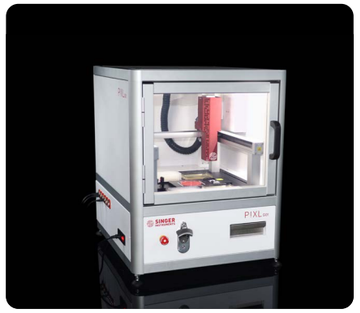


P!XL+

Supercharged and packed with features: fluorescence detection, MALDI-TOF plate preparation and ZOI analysis. Resolve even the smallest colonies with publication grade image capture and improved detection.

P!XL GO!

An easy-to-use, entry level colony picker. Super reliable and precise with a 99% transfer rate. The most affordable model in our range, loaded with everything you need. Extensible technology that's ready to grow when you are.



PIXL GO!

A super reliable, precision colony picker with a proven 99% transfer rate. The most affordable model in our range, loaded with everything you need. Extensible technology that is ready to grow when you are.

PIXL+

Our world-class colony picker... supercharged! Loaded with features to streamline your colony isolation workflows.

PIXL MAX

Supercharged PIXL microbial colony picking technology. This is our fastest model yet, built from the ground up with AI colony detection and morphological analysis! All packed into a small footprint.

	PIXL GO!	PIXL+	PIXL MAX
Speed	●○○○○	●●○○○	●●●●●
Accuracy	●●●●●	●●●●●	●●●●●
Integratability	●●●●●	●●●●●	●●●●●
Diverse picking	●●●●●	●●●●●	●●●●●
Image quality	●●○○○	●●●●○	●●●●○
Price	$	$ $	$ $ $
	–	MALDI-TOF, ZOI, Fluorescence	MALDI-TOF, ZOI, Fluorescence, AI

Technical specifications

Model
PIXL Max (with automatic door)

Product code
PMAX-001

Warranty
1 year

Dimensions
- Height: 970mm
- Depth: 775mm
- Width (with air regulator): 725mm
- Weight: 125kg

Monitor
21.5", 1080p Full HD

PC specifications
- Intel Core Ultra 7 (20 cores up to 5.3 GHz)
- Windows 11 Pro
- 64 GB DDR5 RAM
- 512 GB TLC M.2 SSD
- On board Wi-Fi
- NVIDIA® RTX™ 2000 ADA 16 GB GDDR6
- Mouse, keyboard and monitor included
- Dimensions: 303.5 mm x 95 mm x 293 mm
- Weight: 3.97 kg

Power
- 110 – 240V AC 50-60Hz
- External power supply: 48V DC, 4.2A

Camera
- 8 MP colour camera
- 36.5 pixels/mm at mid-plate agar depth
- Field of view 150×150mm

Top light
- White
- Violet 1(380-390 nm)
- Violet 2 (410-420 nm)
- Blue (465-485 nm)
- Cyan (490-510 nm)
- Green (520-540 nm)

Sterilisation methods
UV-C germicidal bulb

Pinning speed
Up to 3000 colonies per hour

Air compressor requirements
- Dry, oil-free, compressed air/nitrogen
- Minimum 5 bar (72 psi); Maximum 10 bar (150 psi)
- Consumption: 3 litres/min (0.1 CFM)

Consumables
PickupLine 200m reels - 6 in total
(Up to 30,000 sterile, disposable tips per reel)

Source plate types
- 90mm and 150 mm Petri dishes.
- OmniTray SBS rectangular plate
- 120mm Square plate
- 96 and 384 multi-well plates (within re-array mode)
- 96 and 384 deep-well plates (within re-array mode)

Target plate types
- OmniTray rectangular plate with pinning densities ranging from 96 – 1536.
- 96 and 384 multi-well plates
- 96 and 384 deep-well plates
- 96 and 384 PCR plates
- MALDI-TOF slide (Shimadzu and Bruker)

Agar height detection
- Ultrasonic agar height sensor.
- Surface detection on every pick.

AI features
- Colony detection
- Morphology classification

Colony filtering parameters
- Size, colour, shape, proximity, and intensity
- Morphology

Data output
- CSV files containing phenotypic data for all colonies along with Cartesian coordinate positions
- Along with barcodes for each plate*
- PNG files of each colony for full traceability

* Barcode reader is not included by default.

Customisable

We can tailor your PIXL to your needs

Unique assay or labware?

We designed PIXL to take off-the-shelf consumables, but we believe in creating solutions unique to your lab. If you don't see your assay or labware mentioned, then let's talk! That's just the kind of challenge we love to solve!

Integrating data streams or workcells

Our well documented and completely open API is built with simplicity in mind. Our developers can tailor the API to your preferred LIMS or integration provider.

Specialised environments

From anaerobic chambers to laminar airflow, each PIXL was designed with a small foot print and API for integration. The optimum for colony picking in small or sensitive spaces.

Door options

Every PIXL offers three choices for the door. The fully automatic door, the space saving door and the manual door. Ask us about the best choice for your workflow.

"The robotic arm has allowed us to fully automate the colony picking process, thus freeing up our staff to focus on other things,"

Wilson Liu, Automation Engineer
Aether Biomachines

AETHER

Integrate with anyone

Every PIXL is an automation-ready solution from day one. Tested with multiple integration providers, with excellent documentation, and an API provided with every unit.

Choose your door, choose your robot arm — **INTEGRATE!**

BIOSERO

revvity

HighRes biosolutions

RORZE Lifescience

MEGAROBO

ThermoFisher SCIENTIFIC

PAA

Lab Services laboratory automation

Don't see your favourite integrator? Let us know.

Switch between manual operation and full walkaway automation with ease

Anaerobic chamber? No problem!

Designed for labs that want to future proof their workflows

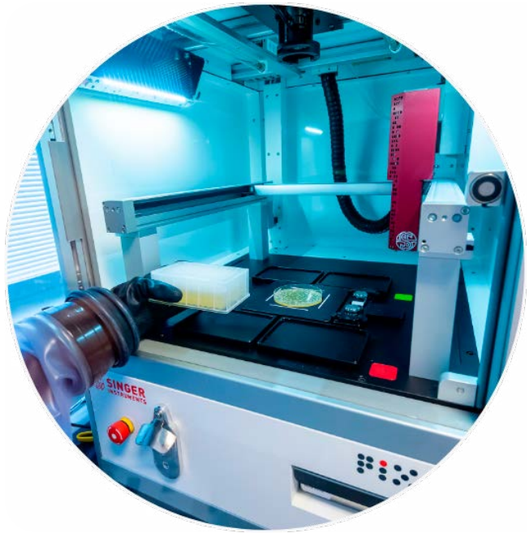
The PIXL Max, with around-the-clock integration of a robotic arm, can achieve a remarkable 68,000 colonies picked each day. Imagine what your laboratory could discover with that kind of throughput and a 99% transfer efficiency.

Create a fully automated colony picking workflow or, integrate your colony picking operation with existing upstream or downstream processes, to build a fully automated workcell.

don whitley scientific culturing innovation

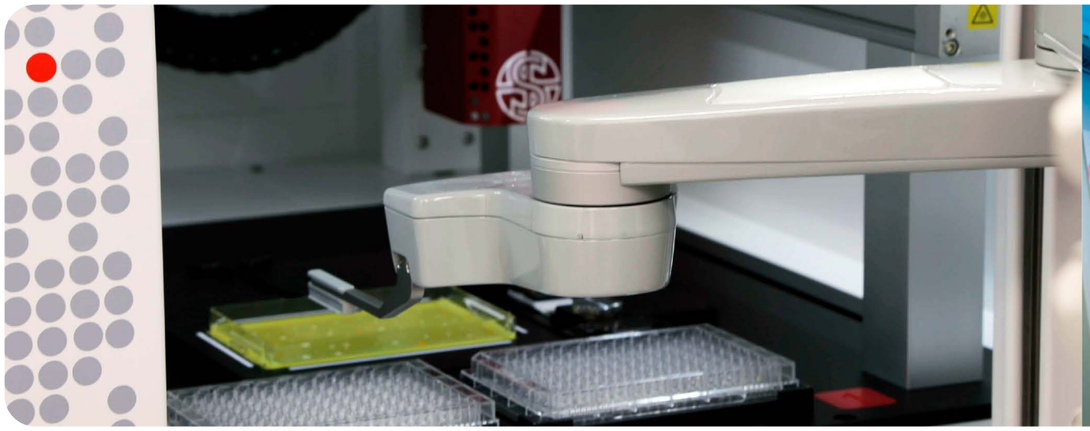
BIOLOG

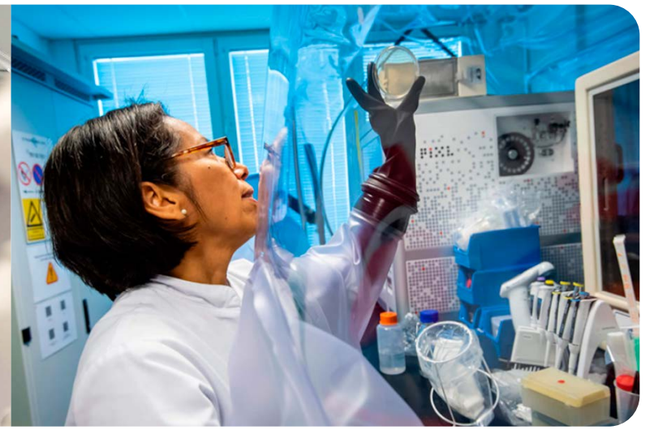
Anaerobe Systems THE OXYGEN-FREE SPECIALISTS A BIOLOG BRAND



COY LAB PRODUCTS

磐麦科技 PUNMICRO





"The PIXL is extremely reliable, I haven't had any issues with contamination, breakdown or just any sort of malfunction, it's worked beautifully every time I've needed it. PIXL is a great instrument to have in the lab if you're doing anaerobic work."

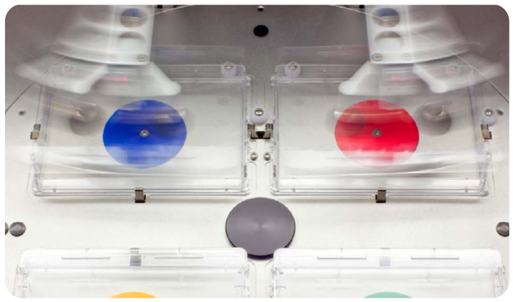
Dr Mari Rodriguez
Senior Scientist

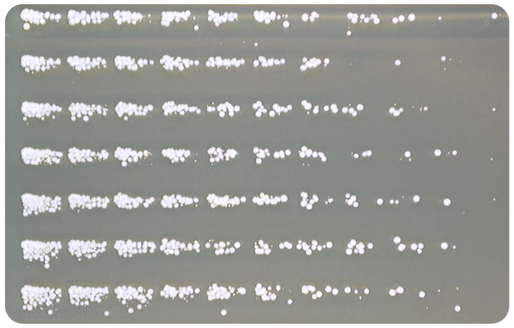
SNIPRBIOME A CRISPR COMPANY

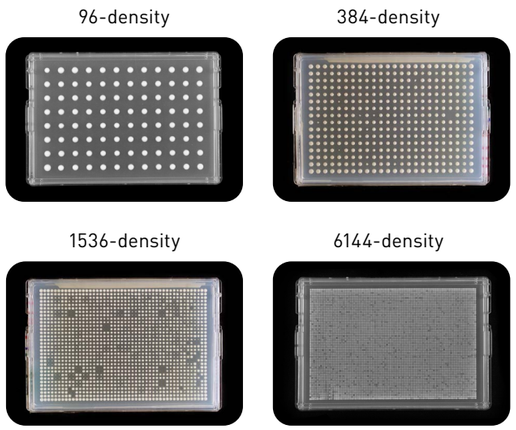
ROTOR+ | PIXL

The ultimate colony picking combo

Combining ROTOR+ with PIXL lets you pick and re-plate at densities up to 6144 and at a rate of nearly a million colonies an hour.







Pin arrays up to 6144 colonies in one hit
Replicate entire libraries in 96, 384, 1536 and even 6144 array formats.

Transfer efficiency >99%
Across a variety of species, ensured by on agar mixing or 3D well mixing.

Replicate an array in under 25 seconds
Agar to agar, liquid to liquid. MWP, DWP, PlusPlates and PCR plates.

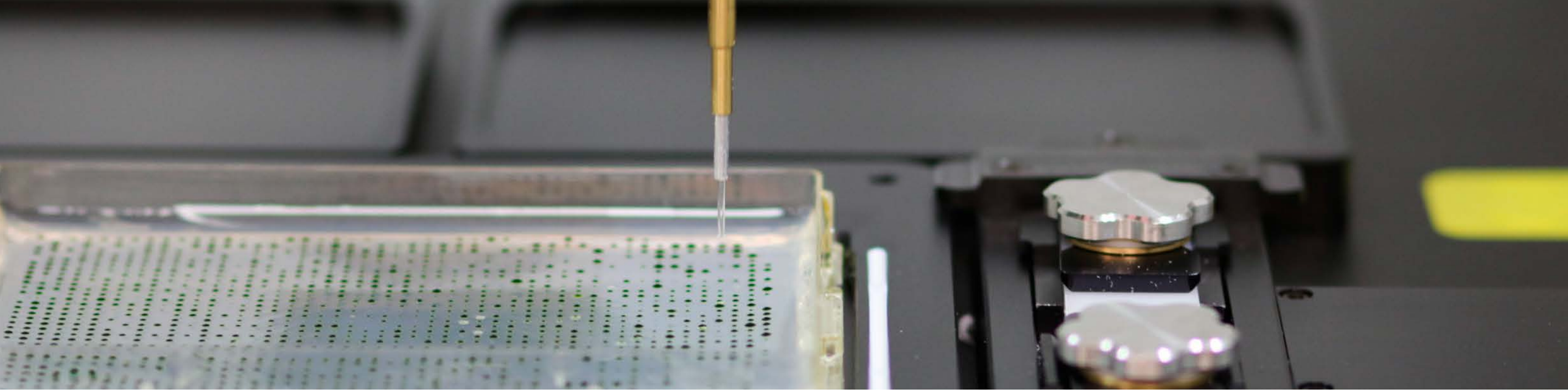
Cut experimental costs by 50%
Significantly reduce your consumables and time / labour costs by working in 6144 array format.

10 000+ Citations
Replicating arrays worldwide: algae, bacteria, fungi and more.

Array > Analyse > Cherry Pick > Repeat
The complete strain optimisation, library generation and phenotype screening solution.

Mating or Co-culture simplified
Pin colonies from two independent plates onto the same locations to study their interactions.

Streak up to 384 colonies at once.
Streak colonies in 96 and 384 format with either PIXL or ROTOR+.



Dr Michal Breker-Dekel is the leading light in the effort to cement *Chlamydomonas reinhardtii* as the preferred model organism for the plant superkingdom. Her research group at the Hebrew University of Jerusalem focus on understanding chloroplast biology and its crucial ties with carbon fixation from metabolic processes.

"When I set up on my own there was no question that I wanted the ROTOR+ in my lab. I think it's such an excellent robot. I don't think there's any other product quite like it. It allows us to do so many experiments and it just works all the time"

The classic pairing of PIXL and ROTOR+ efficiently picks the randomly mutagenised Chlamydomonas reinhardtii and replica-plates it in an arrayed format for temperature sensitivity assays (Breker et. al., JOVE 2016).

"We build mutant collections up to 200 000 strong to reach good genetic saturation. We pick them with PIXL and maintain them with ROTOR+."

Once the mutants are identified, SporePlay+ is narrows down the target pool through tetrad dissection revieling vital information about the nature and mechanism of their genetic interactions.

The Breker lab are now adapting their protocols to apply their genetic toolkit to marine microalgae species, exploring broader ecological questions at a larger scale.

Dr Michal Breker-Dekel
Hebrew University of Jerusalem

Why trust us?

Singer Instruments are a small family owned business located on the edge of Exmoor national park in Somerset. We care about your ability to get the best out of our robots and have been serving scientists world wide with reliable solutions since 1934. But don't just take our word for it, listen to our users.

2000+ happy microbiologists, 10,000 citations and counting

76

User NPS score 2024-2025

Average of 1 hour support response time

"I think they're a great company, they help out the community. We got a lot of help from Singer over the years, upgrading bits and pieces, and PIXL's been pretty rock solid for some time."

Dr Anthony Borneman
Research Manager at the Australian Wine Research Institute

"The robot is very easy to use (any undergrads in the lab have used the robot) and is very dependable (we actually never had to use our service contract). People at Singer are responsive and work with the customer to set up different applications. Highly recommend!"

Juan Fuxman
Associate Professor at Boston University

SINGER INSTRUMENTS

A RESPONSIBILITY TO SCIENCE!

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