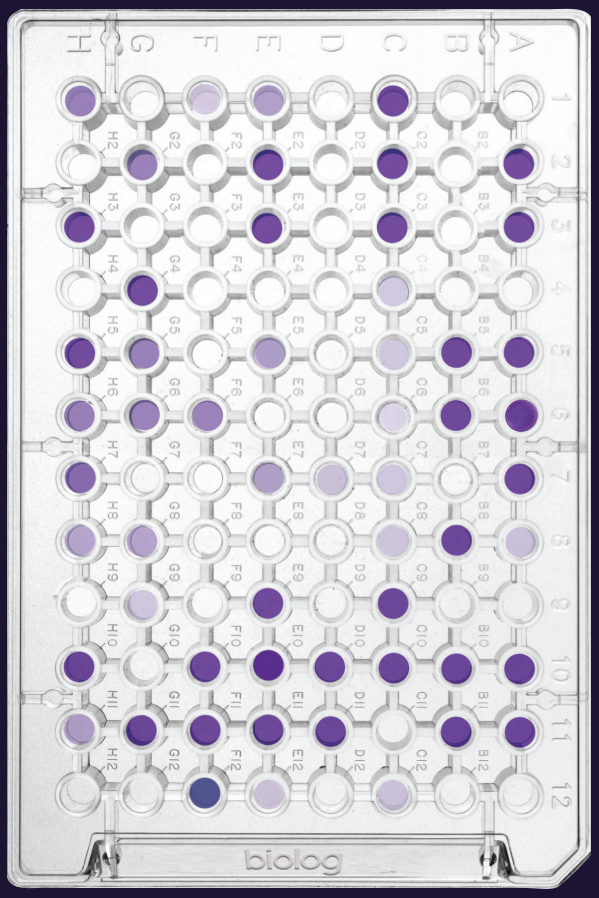
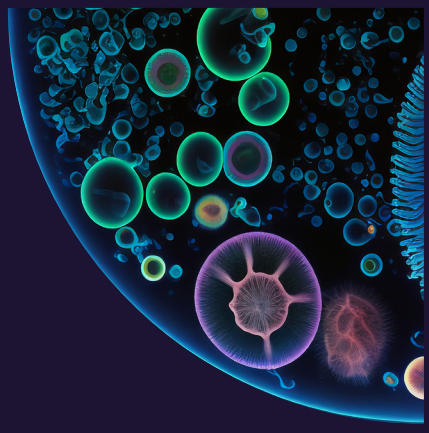


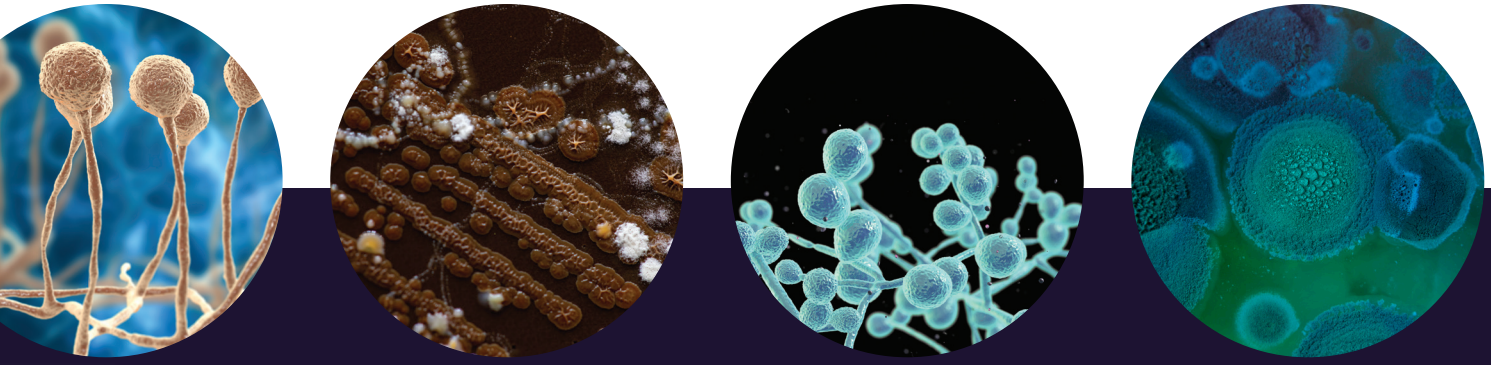


Biolog for Characterizing Diversity

Get relevant data you need faster with Phenotype MicroArrays

Biolog for Cellular Insights

Phenotype MicroArrays enable researchers to quickly gain cellular insights, by growing cells in thousands of culture conditions simultaneously.

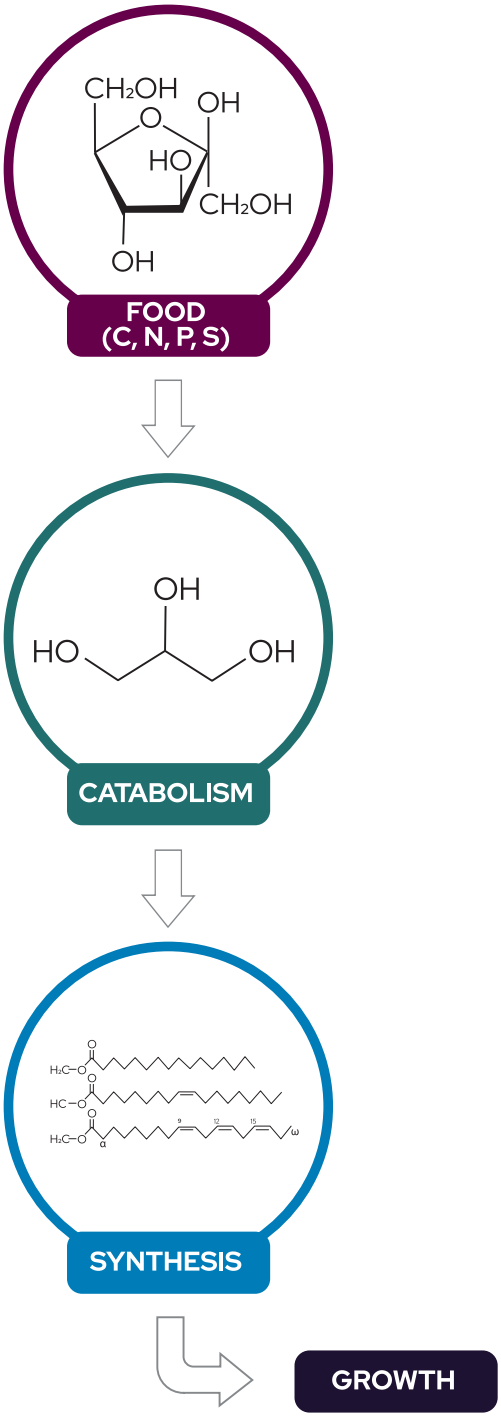


Phenotype MicroArray™ technology is a proven method of phenotypic cellular screening that is extremely beneficial in a wide range of research applications:

- Uncover functional effects of gene editing
- Measure changes in cell metabolism over time or under different environmental conditions
- Evaluate drug/antibiotic candidates in toxicological profiling and mode of action studies
- Monitor phenotypic drift and QC of cell line passages
- Optimize efficacy in bioprocessing production

Learn more at **biolog.com**

How Phenotype MicroArrays Work



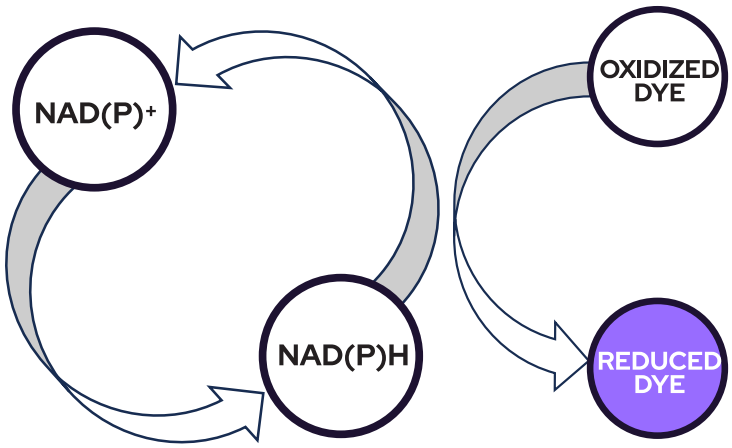
Explore nutrient preferences for your cells with pre-plated panels of substrates.

The intensity of the redox dye color change reflects how much substrate is consumed.

Kinetic measurements establish how quickly substrates are consumed.

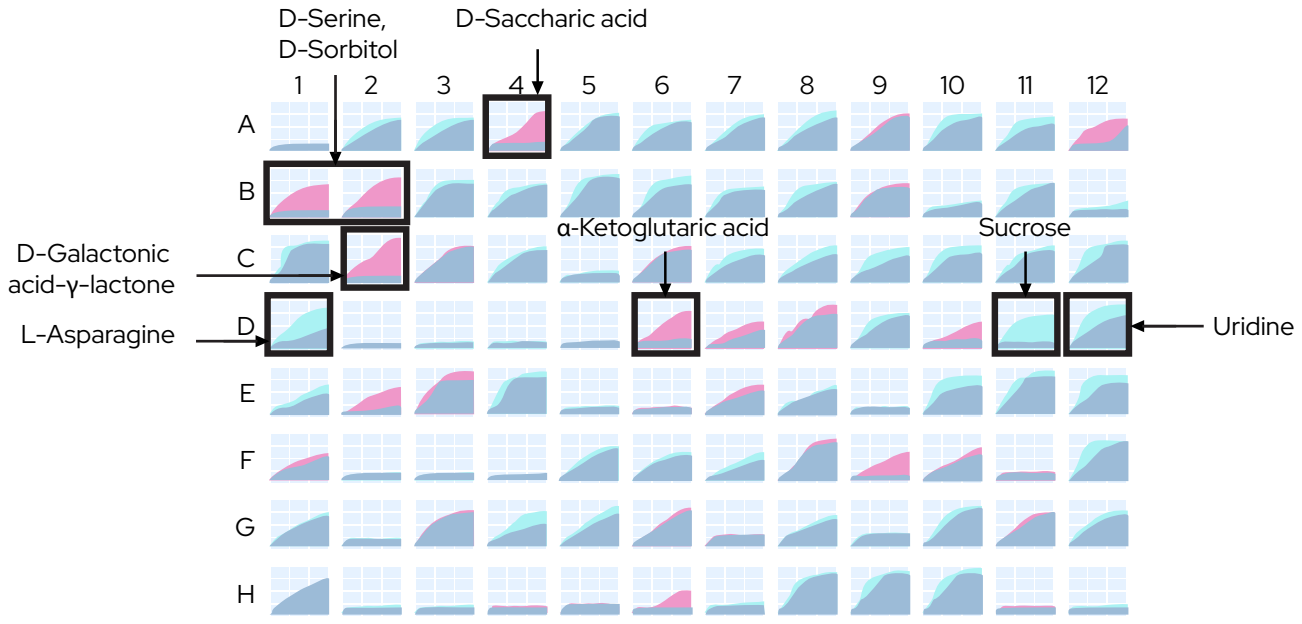
Phenotype MicroArrays are preconfigured microplates, each containing up to 95 different small-molecule substrates. Each substrate is intended to interrogate different cellular properties, including metabolic uptake, stress response, drug sensitivity, etc.

You can monitor growth of your cells under all conditions at once. You can also monitor cellular respiration by utilizing Biolog's patented redox dye technology, which amplifies the signal from NADPH/NADH production.



Phenotyping to measure growth

Effortlessly evaluate multiple conditions simultaneously and determine growth rates.



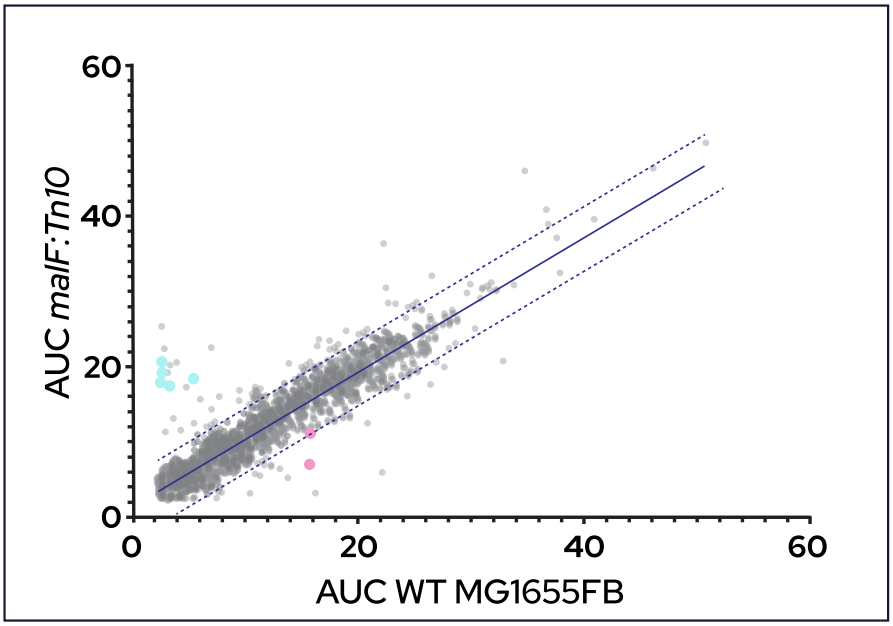
Phenotype MicroArrays, when used in conjunction with an Odin™ platform, measures optical density at 590 nm (OD 590) over time. The kinetic information can be used to make comparisons between strain differences that may not be readily apparent from a single endpoint read.

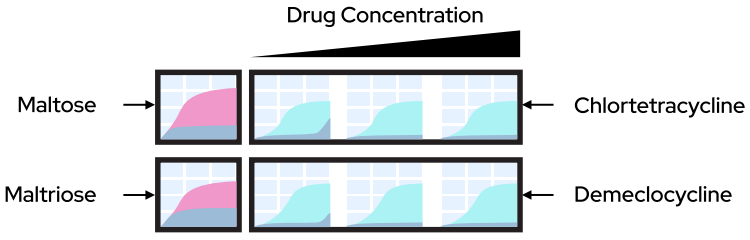
E. coli O157:H7 and CGSC6300 strains are compared on PM1, a carbon source utilization plate. OD measurements representing metabolic activity are represented on the y-axis, and time (0-24 hours) is represented on the x-axis. O157:H7 shows loss of function for the ability to metabolize several carbon sources including D-saccharic acid, D-serine, D-sorbitol, D-galactonic acid-γ-lactone, α-ketoglutaric acid, and shows a gain of function relative to CGSC6300 for metabolism of D-sucrose.

Phenotyping to understand metabolism

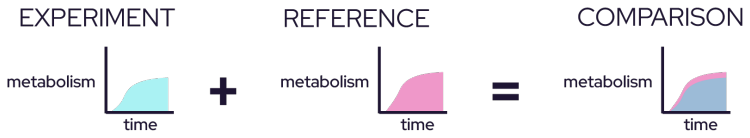
Efficiently compare metabolic differences between two or more strains or cell lines. The Odin platform makes it easy to collect and analyze all the data.

By measuring redox dye production, differences in cellular metabolism can also be established. An *E. coli* cell line was engineered to lose the ability to metabolize maltose. The same cell line was engineered to gain resistance to tetracycline. With Phenotype MicroArrays and the Odin platform, up to 50 plates can be run concurrently, so thousands of conditions can be assayed easily at the same time. We can quickly confirm loss of function in similar compounds (such as maltotriose) and gain of function in resistance to similar drugs (such as demeclocycline).



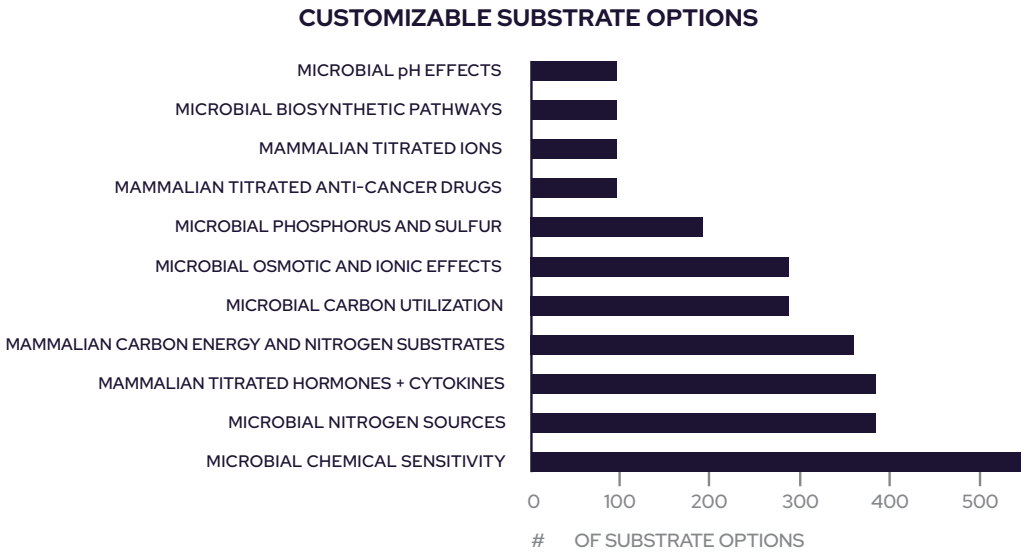


With Phenotype MicroArrays, it's efficient to screen many conditions at once, and other, unexpected phenotypic changes may be apparent when comparing the conditions.



Custom Solutions for Easy Efficiency

Customizable Phenotype MicroArray options offer an easy way to tailor your experiments by selecting a unique set of substrates from over 1,200 chemicals in Biolog's library, to each well of a 96-well microplate.



Interrogate 1,000s of metabolic pathways and chemical sensitivity properties of microbial, mammalian, yeast and fungal cells.

Select from 5 categories to create your own Customized Phenotype MicroArrays:

- Bacterial metabolic (659 chemicals)
- Bacterial inhibitor (426 chemicals, multiple concentrations)
- Fungal inhibitor (120 chemicals, multiple concentrations)
- Mammalian metabolic (409 chemicals)
- Mammalian inhibitor (22 chemicals, multiple concentrations)

Learn more at **biolog.com**

Plate Name	Description	Catalog #
PM1 Microplate	PM 1 - 96 Carbon utilization assays	12111
PM2 Microplate	PM 2 - 96 Carbon utilization assays	12112
PM3 Microplate	PM 3 - 96 Nitrogen utilization assays	12121
PM4 Microplate	PM 4 - 96 Phosphorus - Sulfur utilization assays	12131
PM5 Microplate	PM 5 - 96 Biosynthetic pathway/nutrient stimulation	12141
PM6 Microplate	PM 6 - 96 Nitrogen utilization assays	12181
PM7 Microplate	PM 7 - 96 Nitrogen utilization assays	12182
PM8 Microplate	PM 8 - 96 Nitrogen utilization assays	12183
PM9 Microplate	PM 9 - 96 Osmotic/Ionic response assays	12161
PM10 Microplate	PM 10 - 96 pH response assays	12162
PM11 Microplate	PM 11 - 96 Bacterial chemical sensitivity assays	12211
PM12 Microplate	PM 12 - 96 Bacterial chemical sensitivity assays	12212
PM13 Microplate	PM 13 - 96 Bacterial chemical sensitivity assays	12213
PM14 Microplate	PM 14 - 96 Bacterial chemical sensitivity assays	12214
PM15 Microplate	PM 15 - 96 Bacterial chemical sensitivity assays	12215
PM16 Microplate	PM 16 - 96 Bacterial chemical sensitivity assays	12216
PM17 Microplate	PM 17 - 96 Bacterial chemical sensitivity assays	12217
PM18 Microplate	PM 18 - 96 Bacterial chemical sensitivity assays	12218
PM19 Microplate	PM 19 - 96 Bacterial chemical sensitivity assays	12219
PM20 Microplate	PM 20 - 96 Bacterial chemical sensitivity assays	12220
PM21 Microplate	PM 21 - 96 Yeast chemical sensitivity assays	12221
PM22 Microplate	PM 22 - 96 Yeast chemical sensitivity assays	12222
PM23 Microplate	PM 23 - 96 Yeast chemical sensitivity assays	12223
PM24 Microplate	PM 24 - 96 Yeast chemical sensitivity assays	12224
PM25 Microplate	PM 25 - 96 Yeast chemical sensitivity assays	12225
PM-M1	PM-M1 Mammalian metabolite utilization assays	13101
PM-M2	PM-M2 Mammalian metabolite utilization assays	13102
PM-M3	PM-M3 Mammalian metabolite utilization assays	13103
PM-M4	PM-M4 Mammalian metabolite utilization assays	13104
PM-M5	PM-M5 Mammalian cation/anion sensitivity assays	13105
PM-M6	PM-M6 Mammalian hormone/metabolic effector assays	13106
PM-M7	PM-M7 Mammalian hormone/metabolic effector assays	13107
PM-M8	PM-M8 Mammalian hormone/metabolic effector assays	13108
PM-M11	PM-M11 Mammalian chemosensitivity assays	13111
PM-M12	PM-M12 Mammalian chemosensitivity assays	13112
PM-M13	PM-M13 Mammalian chemosensitivity assays	13113
PM-M14	PM-M14 Mammalian chemosensitivity assays	13114
MitoPlate I-1	MitoPlate I-1	14104
MitoPlate S-1	MitoPlate S-1	14105

Biolog for You

Find out how at biolog.com

biolog

BIOLOG INC.

21124 Cabot Blvd.
Hayward, CA 94545
+1 800 284 4949

BIOLOG LAB SERVICES

225 Corporate Blvd, Suite E
Newark, DE 19702
+1 302 737 4297