YT MicroPlate™

A1 Water	**A2** Acetic Acid	**A3** Formic Acid	**A4** Propionic Acid	**A5** Succinic Acid	**A6** Succinic Acid Mono-Methyl Ester	**A7** L-Aspartic Acid	**A8** L-Glutamic Acid	**A9** L- Proline	**A10** D-Gluconic Acid	**A11** Dextrin	**A12** Inulin
B1 D-Cellobiose	**B2** Gentiobiose	**B3** Maltose	**B4** Maltotriose	**B5** D-Melezitose	**B6** D-Melibiose	**B7** Palatinose	**B8** D-Raffinose	**B9** Stachyose	**B10** Sucrose	**B11** D-Trehalose	**B12** Turanose
C1 N-Acetyl-D-Glucosamine	**C2** α-D-Glucose	**C3** D-Galactose	**C4** D-Psicose	**C5** L-Sorbose	**C6** Salicin	**C7** D-Mannitol	**C8** D-Sorbitol	**C9** D-Arabitol	**C10** Xylitol	**C11** Glycerol	**C12** Tween 80
D1 Water	**D2** Fumaric Acid	**D3** L-Malic Acid	**D4** Succinic Acid Mono-Methyl Ester	**D5** Bromo-Succinic Acid	**D6** L-Glutamic Acid	**D7** γ-Amino-Butyric Acid	**D8** α-Keto-Glutaric Acid	**D9** 2- Keto-D-Gluconic Acid	**D10** D-Gluconic Acid	**D11** Dextrin	**D12** Inulin
E1 D-Cellobiose	**E2** Gentiobiose	**E3** Maltose	**E4** Maltotriose	**E5** D-Melezitose	**E6** D-Melibiose	**E7** Palatinose	**E8** D-Raffinose	**E9** Stachyose	**E10** Sucrose	**E11** D-Trehalose	**E12** Turanose
F1 N-Acetyl-D-Glucosamine	**F2** D-Glucosamine	**F3** α-D-Glucose	**F4** D-Galactose	**F5** D-Psicose	**F6** L-Rhamnose	**F7** L-Sorbose	**F8** α-Methyl-D-Glucoside	**F9** β- Methyl-D-Glucoside	**F10** Amygdalin	**F11** Arbutin	**F12** Salicin
G1 Maltitol	**G2** D-Mannitol	**G3** D-Sorbitol	**G4** Adonitol	**G5** D-Arabitol	**G6** Xylitol	**G7** i-Erythritol	**G8** Glycerol	**G9** Tween 80	**G10** L-Arabinose	**G11** D-Arabinose	**G12** D-Ribose
H1 D-Xylose	**H2** Succinic Acid Mono-Methyl Ester plus D-Xylose	**H3** N-Acetyl-L-Glutamic Acid plus D-Xylose	**H4** Quinic Acid plus D-Xylose	**H5** D-Glucuronic Acid plus D-Xylose	**H6** Dextrin plus D-Xylose	**H7** α-D-Lactose plus D-Xylose	**H8** D-Melibiose plus D-Xylose	**H9** D-Galactose plus D-Xylose	**H10** m-Inositol plus D-Xylose	**H11** 1,2-Propanediol plus D-Xylose	**H12** Acetoin plus D-Xylose

FIGURE 1. Carbon Sources in YT MicroPlate

■ Oxidation Tests (rows A–C, shaded) □ Assimilation Tests (rows D–H)

INTRODUCTION

The YT MicroPlate™ provides a broad capability for identification and characterization of yeast strains, including both human isolates and environmental species. Yeast are of particular importance in the food industry, both in food production and in food spoilage. They are also important in human health both as normal flora (e.g. in the gastrointestinal tract) and as occasional pathogens. There has been a renewed interest in the use of yeast as “probiotics” to beneficially influence the ecology of the digestive tract and the ecology of plant surfaces.

The unique physiological properties of yeast have made them relatively difficult to test and identify. Yeast tend to thrive in low pH and high sugar environments. Most species have a slower growth rate and metabolism as compared to common bacteria.

YT MICROPLATE

The Biolog YT MicroPlate™ (Figure 1) is designed for identification and characterization of a very wide range of Yeasts. Biolog’s MicroPlates and databases were first introduced in 1989, employing a novel, patented redox chemistry. This chemistry, based on reduction of tetrazolium, responds to the process of metabolism (i.e. respiration) rather than to metabolic by-products (e.g. acid). Biolog’s chemistry works as a universal reporter of metabolism and simplifies the testing process as color developing chemicals do not need to be added. Since the YT MicroPlate™ measures both metabolic reactions as well as turbidity growth to produce identifications, it provides superior capability for all types of yeasts organisms. The database for the YT Microplate™ is now over 267species. It is by far the largest kit based identification database available.

PROCEDURE FOR USING YT MICROPLATES

The Biolog System makes identifying yeast nearly as easy to identify as bacteria. The testing protocol is a very simple one:

1) The strain of interest is cultured on a special agar medium, BUY™ Agar (available for Biolog either as dry powder – Catalog No. 70005 or already prepared in Petri plates – Catalog No. 71005)
2) Cells are removed from the surface of the agar with a sterile swab and suspended in sterile water at the specified density.
3) 100 µl of the cell suspension is inoculated into each of the 96 wells of the Biolog YT MicroPlate (carbon sources shown schematically above),
4) The MicroPlate is incubated at 26-28°C for 24, 48 or 72 hours until a sufficient metabolic pattern is formed.
5) For identification the MicroPlates are read with the MicroStation ™ or the OmniLog™ Plus system and compared to the YT database. (Biolog Catalog No. 22605D)

Some yeast species are inhibited by the tetrazolium violet redox used in Biolog MicroPlates, so the YT MicroPlate is configured with both metabolism test and turbidity tests. The first 3 rows of the panel (rows A-C) contain carbon source metabolism tests using tetrazolium violet as a colorimetric indicator. The next five rows of the panel (rows D-H) contain carbon source turbidity tests. Results from this test are scored turbidimetrically. The last row of the panel (row H) has wells that contain 2 carbon sources. These wells test for the co-utilization of various carbon sources with D-Xylose.

For manual characterization of yeast strains, reactions may be read by eye. Metabolism test rows A-C should be read against a white background and turbidity tests in rows D-H should be read against a black background. Depending on the strain, some reactions may be faint and difficult to read by eye.

For species identification, the YT MicroPlate must be read with the Biolog MicroStation Reader. A list of the 267 species of yeast identified by the Biolog System is shown on the back of this sheet.

CONTACT INFORMATION

The Biolog Microbial Identification/Characterization System will be an invaluable addition to your microbiology laboratory. Incidentally, our FF MicroPlate also has a subset of 76 yeast species for identification.

For more details, contact us using the information below:

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