

Product Information

39932 WL-Differential Broth, Modified (Wallerstein Laboratory Differential Broth, Modified)

Recommended for selective isolation and enumeration of bacteria in the brewery industry and industrial fermentation. The medium will allow the growth of a wide range of organisms including Enterobacteriaceae, *Flavobacterium*, *Lactobacillus* and *Pediococcus* species.

Composition:

Ingredients	Grams/Litre
Casein enzymic hydrolysate	5.0
Yeast extract	4.0
Dextrose	50.0
Monopotassium phosphate	0.55
Potassium chloride	0.425
Calcium chloride	0.125
Magnesium sulfate	0.125
Ferric chloride	0.0025
Manganese sulfate	0.0025
Bromo cresol green	0.022
Captan	0.004
Final pH 5.5 +/- 0.2 at 25°C	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance: Greenish yellow coloured, homogenous, free flowing powder.
Colour and Clarity: Bluish green coloured, very slightly opalescent solution.

Directions:

Dissolve 80.25 g in 1 litre distilled water. Boil to dissolve the medium completely. Sterilize by autoclaving at 121°C for 15 minutes. If desired, to obtain a pH of 6.5, add 1% solution of sodium bicarbonate.

Principle and Interpretation:

WL Differential Broth is based on the formulation of Green and Gray [1], it is recommended for the determination of the microbiological flora in brewing and fermentation processes. In this medium captan is used to replace cycloheximide [3].

Yeast extract, casein enzymic hydrolysate provide nitrogenous compounds, vitamin B complex, trace elements and other important growth nutrients for the microorganisms. Dextrose is the fermentable sugar and monopotassium phosphate is the buffering agent. The other salts are providing important ions for the metabolism and maintains the osmotic balance. Bromo cresol green is the pH indicator, change to yellow if dextrose is fermented. Captan suppresses the growth of yeasts and moulds in brewing samples, permitting the detection and enumeration of bacteria which may be present in small numbers.

Cultural characteristics after 48 hours at 35°C.

Organisms (ATCC)	Growth
<i>Escherichia coli</i> (25922)	+++
<i>Lactobacillus fermentum</i> (9338)	+++
<i>Proteus mirabilis</i> (25933)	+++

<i>Saccharomyces uvarum</i> (9080)	-
<i>Saccharomyces cerevisiae</i> (9763)	-

References:

1. S.R. Green, P.P. Gray, Differential Procedure Applicable to Investigation in Brewing, Wallerstein Lab. Comm., 13, 357 (1950)
2. J.D. MacFaddin, Media for isolation-cultivation-identification-maintenance of medical bacteria, vol. 1, p. 854-856. Williams & Wilkins, Baltimore, MD (1985)
3. V.L. Bailey, J.L. Smith, J.R. Bolton, Novel Antibiotics As Inhibitors For The Selective Respiratory Inhibition Method Of Measuring Fungal: bacterial Ratios In Soil., Online Publication P. 1-17 (2003)