PRODUCT SPECIFICATION SHEET

WL Nutrient Medium (DM288)

Intended Use
WL Nutrient Medium (DM288) is recommended for cultivation and isolation of microorganisms encountered in breweries and industrial fermentations.

Product Summary and Explanation
WL (Wallerstein Laboratory) nutrient media are formulated as described by Green and Gray[1, 2] in their study of various fermentation processes. These media were developed as a result of an exhaustive study examining the methods of fermentation control procedures in worts, beers, liquid yeasts and similar fermentation products led to the development of these media. Baker's yeast counts can be carried out in this medium at a pH 5.5. By adjusting the pH to 6.5, the medium can be used for obtaining counts of Baker and distillers yeast.[3] The medium can support the growth of bacteria, but unless the number of yeast cells is small the bacteria may not be detected. The WL Nutrient broth plate is incubated aerobically to obtain a total count of mainly yeast colonies. If desired Durhams tubes can be added to WL Nutrient Broth to study fermentation reactions.
WL Nutrient Medium and WL Differential Medium are used simultaneously as a set of three plates. One plate of WL Nutrient Agar and two plates of WL Differential Agar are prepared.[3] The WL Nutrient Agar plate is incubated aerobically to obtain a total yeast count while one WL Differential Agar plate gives the count of acetic acid bacteria, *Flavobacterium*, *Proteus* and thermophilic bacterial count when incubated aerobically. Another WL Differential Agar Plate is incubated anaerobically for the growth of lactic acid bacteria and *Pediococcus*. While determining microbial counts using these media, temperature and time of incubation will vary depending on the nature of material under test. For brewing materials temperatures of 25°C are employed while for baker's yeast and alcohol fermentation mash analyses temperatures of 30°C are employed.

Principles of the Procedure
WL Nutrient Medium contains yeast extract, which serves as a source of trace elements, vitamins and amino acids. Casein enzymic hydrolysate is used as a source of nitrogen, amino acids and carbon. Dextrose is the source of carbohydrate and energy. Monopotassium phosphate acts as a buffering agent. Potassium chloride, calcium chloride and ferric chloride are essential ions that help to maintain the osmotic balance of the medium. Magnesium sulphate and manganese sulphate are sources of divalent cations. Bromocresol green is a pH indicator.

Formula / Liter

Ingredients	Gms / Liter
Casein enzymic hydrolysate	5.00
Yeast extract	4.00
Dextrose	50.00
Monopotassium phosphate	0.55
Potassium chloride	0.425
Calcium chloride	0.125
Magnesium sulphate	0.125
Ferric chloride	0.0025
Manganese sulphate	0.0025
Bromo cresol green	0.022
Agar	20.00

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Final pH: 5.5 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications

Precautions

1. For Laboratory Use only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions

1. Suspend 80.25 grams of the medium in one liter of distilled water.
2. Heat to boiling, to dissolve the medium completely.
3. Autoclave at 121°C, 15 psi pressure, for 15 minutes / validated cycle.
4. If desired, to obtain a pH of 6.5, add 1% solution of sodium bicarbonate before sterilization.

Quality Control Specifications

Dehydrated Appearance	Light yellow to light green homogeneous free flowing powder
Prepared Medium	Bluish green coloured very slightly opalescent gel forms in Petri plates
Reaction of 6.02% Solution	pH : 5.5 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 2.0% Agar gel

Expected Cultural Response: Cultural characteristics observed after an incubation at 25-30°C for 40-48 hours.

Sr. No.	Organisms	Results to be achieved		
		Inoculum (CFU)	Growth	Recovery
1.	*Escherichia coli ATCC 25922*	50 -100	fair-good	40-50%
2.	*Lactobacillus fermentum ATCC 9338*	50 -100	fair-good	40-50%
3.	*Proteus mirabilis ATCC 25933*	50 -100	fair-good	40-50%
4.	*Saccharomyces cerevisiae ATCC 9763*	50 -100	good-luxuriant	>=70%
5.	*Saccharomyces uvarum ATCC 28098*	50 -100	good-luxuriant	>=70%

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer appropriate references for specific test procedures.

Results

Refer appropriate references and test procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

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Expiration

Refer to the expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
2. Consult appropriate texts for detailed information and recommended procedures.

Packaging

Product Name : WL Nutrient Medium
Product Code : DM288
Available Pack sizes : 500gm

References

1. Green S. R. and Gray P. P., 1950, Wallerstein Lab. Commun., 12:43
2. Green S. R. and Gray P. P., 1950, Wallerstein Lab. Commun., 13:357
3. MacFaddin J. F., 1985, Media for Isolation- Cultivation- Identification- Maintenance of Medical Bacteria, Vol.1,Williams & Wilkins, Baltimore, Md. .

Further Information

For further information please contact your local MICROMASTER Representative.

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