17215 WL Differential Agar (Wallerstein Differential Agar; WLD Agar)

For selective isolation and enumeration of bacteria encountered in breweries and industrial fermentations.

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
Bromocresol Green	0.0022
Cycloheximide (replaced Captan)	0.004
Agar	20.0
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: Faintly greenish yellow coloured, homogeneous, free flowing powder.
Gelling : Firm
Color and Clarity: Turquoise coloured, very slightly opalescent gel forms in petri plates.

Directions:
Suspend 80.26 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 (Wallerstein Laboratory) Differential Agar, Modified is formulated as described by Green and Gray for the examination of materials encountered in brewing and for industrial fermentations containing mixed flora of yeasts and bacteria (1). Captan is additionally included in this medium, differing from the original WL media, to suppress the growth of yeast and mold.
Yeast extract, casein enzymic hydrolysate, dextrose and numerous salts in the medium provide growth requirements for microorganisms. Bromo cresol green is the pH indicator. Captan suppresses growth of yeasts and moulds in brewing samples, permitting the detection and enumeration of bacteria that may be present in small numbers. While determining microbial counts using this medium, temperature and time of incubation will vary depending on the nature of material under test. Temperatures of 25°C are employed for brewing materials while 30°C are employed for baker's yeast and alcohol fermentation mash analyses. WL Differential Agar plates are incubated aerobically for the growth of acetic acid bacteria, *Flavobacterium* species, *Proteus* and thermophilic bacteria while for the growth of lactic acid bacteria and *Pediococcus* species they should be incubated anaerobically.

Cultural characteristics after 48 hours at 35°C.

Organisms (ATCC)	Growth
Escherichia coli (25922)	+++
Lactobacillus fermentum (9338)	+++
Proteus mirabilis (25933)	+++
Saccharomyces cerevisiae (9763)	-
Saccharomyces uvarum (9080)	-

References:

1. S.R. Green, P.P. Gray, A differential procedure applicable to bacteriological investigation in brewing, Wallerstein Lab. Commun., 13, 357 (1950)
2. S.R. Green, P.P. Gray, Wallerstein Lab. Commun., 12, 43 (1950)
3. MacFaddin, Media for isolation-cultivation-identification-maintenance of medical bacteria, vol. 1. Williams & Wilkins, Baltimore, Md. (1985)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.