TM 642 – LACTIC BACTERIA DIFFERENTIAL AGAR

INTENDED USE

For differentiation of homo-fermentative and hetero-fermentative lactic acid bacteria.

PRODUCT SUMMARY AND EXPLANATION

Lactic Bacteria Differential Agar is formulated as per McDonald et al for differentiation of homofermentative lactobacilli and heterofermentative streptococci. Lactobacilli and Streptococci are used as starter cultures in food and dairy industry. Streptococci grow first and produce metabolites, lowering the redox potential which enables Lactobacilli to grow. Lactobacilli synthesize products, which stimulate growth of Streptococci.

Heterofermentative lactic acid bacteria produce CO2, lactic acid, acetic acid, ethanol and mannitol. Homofermentative lactic acid bacteria produce only lactic acid. Homofermentative lactic acid bacteria produce lactic acid from fructose and is indicated by yellow colour formation. Heterofermentative lactic acid bacteria induce lesser acidification and thus vary in the colour formation by the indicator in the medium. Homofermentative bacteria cultivated on this medium form bluishgreen colony on agar while heterofermentative bacteria do not form much-coloured colony on agar surface.

COMPOSITION

Ingredients	Gms / Ltr
Tryptone	10.000
Soya peptone	1.500
Casein acid hydrolysate	3.000
Yeast extract	1.000
Fructose	2.500
Potassium dihydrogen phosphate	2.500
Bromocresol green	0.055
Agar	15.000

PRINCIPLE

This medium consists of Casein acid hydrolysate, soya peptone and yeast extract which supplies nitrogen and carbon compounds, long chain amino acids, vitamins and all the necessary nutrients for the growth of lactic bacteria. Fructose is the fermentable carbohydrate in the medium. Bromo cresol green is the pH indicator.

INSTRUCTION FOR USE

- Dissolve 35.56 grams in 1000 ml purified/distilled water. Add 1 gram of polysorbate 80.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.
- Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to bluish grey homogeneous free flowing powder.

Appearance of prepared medium : Blue coloured clear to slightly opalescent gel forms in Petri plates.

pH (at 25°C) : 7.0 ± 0.2

INTERPRETATION

Cultural characteristics observed with added polysorbate 80 after incubation.

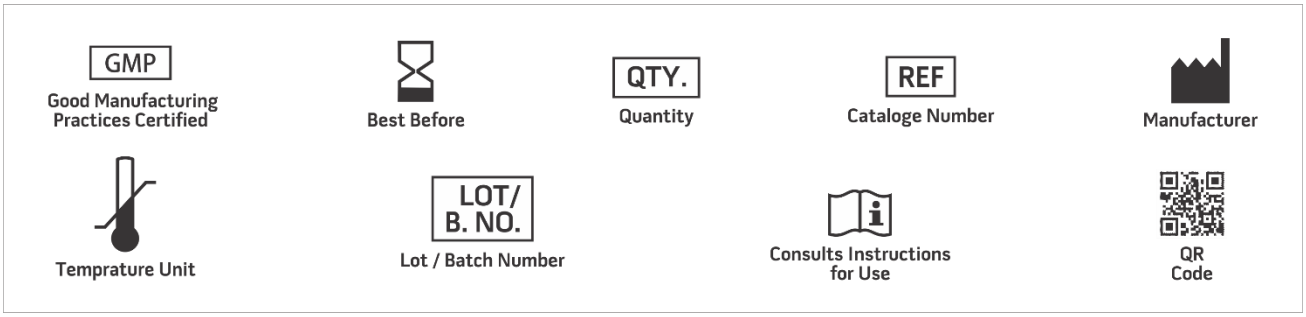
Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Incubation Temperature	Incubation Period
Lactobacillus casei	9595	50-100	Luxuriant	>=70%	Green	35-37°C	18-48 Hours
Lactobacillus plantarum	8014	50-100	Luxuriant	>=70%	Green	35-37°C	18-48 Hours
Streptococcus thermophilus	14485	50-100	Luxuriant (incubated at 45°C)	>=70%	Bluish-green	35-37°C	18-48 Hours
Streptococcus cremoris	19257	50-100	Luxuriant (incubated at 30°C)	>=70%	Blue	35-37°C	18-48 Hours

PACKAGING:
In pack size of 500 gm bottles.

STORAGE
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL
After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES
1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed.,Washington D.C.
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
3. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
4. McDonald L.C., McFecters R.F., Daeschel M.A. and Fleming H.P., 1987, Appl. Environ. Microbiol., 53:1382.
5. Salfinger Y., and Tortorello M.L., 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
6. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed.,APHA Inc., Washington, D.C.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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