TM 1555 – REDDYS DIFFERENTIAL AGAR, MODIFIED (LACTIC STREAK AGAR)

INTENDED USE

Qualitative and quantitative differentiation of lactic streptococci.

PRODUCT SUMMARY AND EXPLANATION

The most common microorganisms used in the dairy industry as starter cultures are lactic streptococci. *Lactococcus lactis* and its subspecies *cremoris* and *diacetylactis* belong to this group. These can be differentiated by biochemical tests, the major criteria being arginine hydrolysis and test for diacetyl and acetoin. Reddy's Differential Agar, Modified (Lactic Streak Agar) recommended for the qualitative and quantitative differentiation of lactic streptococci was originally described by Reddy et al and further modified by Mullan and Walker. This medium is recommended by APHA for the differential enumeration of lactic streptococci.

Lactose fermenters produce acid and form yellow colonies. *Lactococcus lactis* initially produces acid but later on turns to violet-purple colour due to the release of ammonia from arginine. *Lactococcus lactis* subspecies diacetylactis produces a more intense purple colour than *Lactococcus lactis*. The former utilizes the suspended calcium citrate and the citrate degrading colonies exhibit clear zones against a turbid background.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	5.000
Soya peptone	5.000
Yeast extract	5.000
Beef extract	5.000
Lactose	1.500
L-Arginine hydrochloride	1.500
Bromo cresol purple	0.002
Sodium carboxymethyl cellulose	10.000
Calcium citrate	10.000
Agar	15.000

PRINCIPLE

This medium consists of Peptone, Soya peptone, yeast extract and Beef extract which serve as sources of essential nutrients including carbon, nitrogen, amino acids and vitamins. Lactose is the fermentable carbohydrate. L-arginine and calcium citrate are the specific substrate. Bromocresol purple is the pH indicator.

INSTRUCTION FOR USE

- Dissolve 58.0 grams in 1000 ml purified/distilled water and disperse using blender.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 10 psi pressure (115°C) for 10 minutes.

- Cool to 45-50°C. Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder.
Appearance of prepared medium : Light yellow coloured opalescent with greenish tinge forms in Petri plates.
pH (at 25°C) : 6.0 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of colony	Citrate Utilization	Incubation Temperature	Incubation Period
Lactobacillus lactis	8000	50-100	Good-luxuriant	>=50%	Yellow	Negative reaction	32°C	4 Days
L. lactis subsp.cremoris	19527	50-100	Good-luxuriant	>=50%	Purple	Negative reaction	32°C	4 Days
Lactococcus lactis subsp. diacetylactis	13675	50-100	Good-luxuriant	>=50%	Purple	Positive reaction, clearing around the colony	32°C	4 Days

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

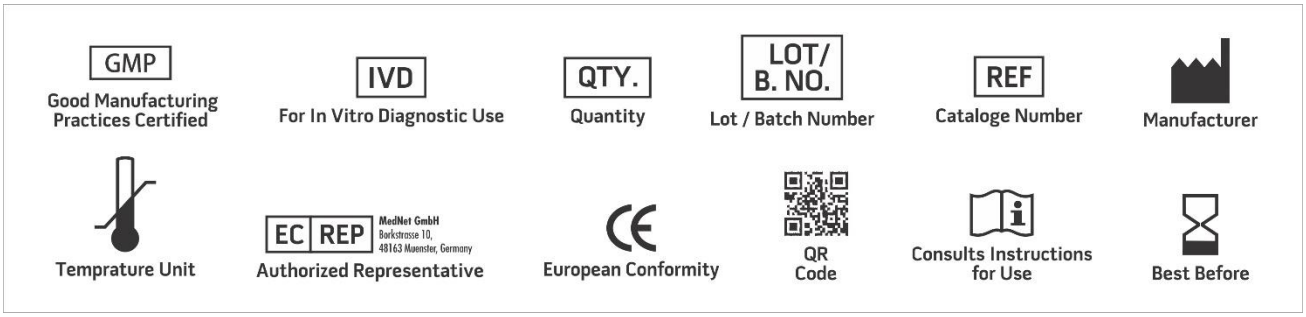
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided 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. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
2. 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.
3. Mullan W. M. A. and Walker A. L., 1979, An agar Medium and a simple streaking technique for the differentiation of the lactic streptococci, Dairy Industries. International, 44 (6):13, 17.
4. Reddy M. S., Vedamuthu E. R., Washam C. J. and Reinbold G. W., 1972,Appl. Microbiol., 24: 947.
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.



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

***For Lab Use Only**

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