

R2A Broth

LQ251X

For cultivation and maintenance of heterotrophic bacteria from potable waters.

Composition**

Ingredients	Gms / Litre
Acicase #	0.500
Yeast extract	0.500
Proteose peptone	0.500
Dextrose (Glucose)	0.500
Starch, soluble	0.500
Dipotassium hydrogen phosphate	0.300
Magnesium sulphate	0.024
Sodium pyruvate	0.300
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

#- Equivalent to Casein Acid Hydrolysate

Directions

Label the ready to use LQ251X tube. Inoculate the sample and Incubate at specified temperature and time.

Principle And Interpretation

The total bacterial count of drinking water is determined by plate count on a nutritionally rich medium. However all organisms present are not able to grow on them, either because they are slow growers or because they cant grow on that media (1). For this reason a nutritionally reduced medium was described. R-2A Agar is a modification of this medium (2,3). R-2A Agar is an alternative medium used for the heterotrophic plate counts and for subculturing isolates from potable waters (1). R-2A Agar is also recommended by APHA (4) for pour plate, spread plate and membrane filter technique. R-2A Broth is similar to R-2A Agar except agar. Total count recommended for the bacterial examination of potable waters gives an estimate of the aerobic and facultatively anaerobic bacteria, which grow best at 35°C in a rich medium (3). R-2A Broth enables better recovery of these bacteria from treated waters under different incubation conditions. Many bacteria from natural waters, which contain limited nutrients at ambient temperature, grow best on the media with less nutrient levels. They grow better at the temperatures below the routine laboratory incubation temperatures of 35 to 37°C(3).

This medium contains acicase, yeast extract, proteose peptone as source of essential growth factors required for metabolism of the bacteria. Dextrose/glucose is the energy source. Starch acts as a neutralizer that neutralizes any toxic metabolites, if present. Phosphate buffers the medium while sodium pyruvate supplies additional nutrition. Magnesium sulphate serves as a source of ions. Due to the presence of the above mentioned ingredients these media allow the growth of stressed and chlorine tolerant bacteria present in treated waters.

Quality Control

Appearance

Sterile Clear R-2A Broth in tubes.

Colour

Yellow coloured clear solution in.

Quantity of medium

10 ml of medium in bottles.

Reaction

7.00- 7.40

Sterility test

Passes release criteria

Cultural Response

Cultural characteristics observed *by using standard ATCC cultures after an incubation at 35-37°C for 24-72 hours. (*-In case of water samples from fields it is suggested to incubate further for upto 7 days to ascertain the absence of organisms)

Organism	Inoculum (CFU)	Growth
<i>Candida albicans</i> ATCC 10231 (00054*)	50-100	good-luxuriant
<i>Enterococcus faecalis</i> ATCC 29212 (00087*)	50-100	good-luxuriant
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	good-luxuriant
<i>Salmonella Enteritidis</i> ATCC 13076 (00030*)	50-100	good-luxuriant
<i>Salmonella Typhi</i> ATCC 6539	50-100	good-luxuriant

Key: (*) Corresponding WDCM numbers

Storage and Shelf Life

Store between 15-25°C. Use before expiry date on the label.

Reference

- 1.Reasoner and Geldreich, 1985, Appl. Environ. Microbiol., 49:1.
- 2.Stark and McCoy. 1938. Zentralbl. Bacteriol. Parasitenkd.Infectionskr. Hyg. Abt.2 98 : 201
- 3.Collins and Willoughby, 1962, Arch. Microbiol., 43:294.
- 4.Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.

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