R-2A Broth

Intended Use
R-2A Broth is used for cultivation and maintenance of heterotrophic bacteria from potable water.

Summary
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 can't grow on that media. For this reason, a nutritionally reduced medium was described. R-2A Agar is a modification of this medium. 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°C to 37°C.

Principle
This medium contains casein acid hydrolysate, yeast extract, proteose peptone as source of essential growth factors required for metabolism of the bacteria. Dextrose 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 abovementioned ingredients these media allow the growth of stressed and chlorine tolerant bacteria present in treated waters.

Formula*

Ingredients	g/L
Casein Acid Hydrolysate	0.5
Proteose Peptone	0.5
Yeast Extract	0.5
Dextrose	0.5
Soluble Starch	0.5
Sodium Pyruvate	0.3
Dipotassium Phosphate	0.3
Magnesium Sulphate	0.024
Final pH (at 25°C)	7.2 ± 0.2

*Adjusted to suit performance parameters.

Directions
1. Bring the R-2A Broth vial to the room temperature 22°C-30°C.
2. Use R-2A Broth as per required application.

Quality Control
Appearance: Yellow to light yellow coloured, clear solution without any precipitate.
Growth Promotion Test: Growth promotion is carried out in accordance with the harmonized method of USP/EP/JP and growth is observed after an incubation at 30°C-35°C for ≤ 3 days.
Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time, inoculating ≤ 100 cfu of appropriate organism (at 30°C-35°C for ≤ 3 days).

Organism (ATCC)	Growth
Escherichia coli (8739)	Good
Enterococcus faecalis (29212)	Good
Salmonella enterica subsp. *enterica* serovar *Enteritidis* (13076)	Good
Candida albicans 3147(10231)	Good

Note: Inoculum for good growth should be between 10-100 cfu and that for inhibition is greater than 100 cfu.

Remarks

1. Do not use media bottles that exhibit any damage, cracks, microbial contamination, discolouration, drying or any other sign of deterioration.
2. Good laboratory practices and hazard precautions must be observed at all times.
3. After use media containers, sample, sample containers and other contaminated materials must be sterilized or incinerated before discarding.
4. All autoclaved biohazards should be disposed off in accordance with state and local environmental regulations.
5. Only qualified personnel who have been trained in microbiological procedures should handle all infected specimens and inoculated culture media.
6. User should ensure that any machinery or apparatus used and by chance contaminated must be safely disinfected or sterilized. The environment in which microbiological cultures are handled must also be taken into account.

Storage and Stability

1. Store the ready to use R-2A Broth at 15°C-25°C in a cool, dry place away from light.
2. Stability of the kit is as per expiry date mentioned on the label.

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

References

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. Greenberg A. E., Trussell R. R. and Clesceri L. S. (Eds.), 1985, Standard Methods for the Examination of Water and Wastewater, 16th ed., APHA, Washington, DC.
5. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat. No.	Product Description	Pack Size
203180220010	Ready Prepared Tube	25 x 10 mL
203180220100	Bottle Media	100 mL