

TECHNICAL DATA SHEET

Orange Serum Broth

Principle

Orange Serum Broth was originally developed by Murdock et al (1951) and Hays (1951) for examining citrus concentrates. Orange serum agar provides an acid environment and is also a source of carbon, and other essential nutrients. The media is composed of tryptone, yeast extract, dextrose, Dipotassium phosphate and orange serum. Tryptone and yeast extract provides nitrogenous, carbonaceous compounds, trace elements and other essential growth nutrients including vitamins. Dextrose is carbon and energy source. Phosphate buffers the medium. The low pH of medium inhibits many commensal bacteria and encourages growth of Lactobacilli and pathogenic fungi and yeast. Orange serum provides an optimal environment for the recovery of acid tolerant microorganisms from citrus fruit products.

Use: For cultivation and enumeration of microorganisms associated with the spoilage of citrus products, cultivation of Lactobacilli, other aciduric organisms and pathogenic fungi.

Contents*

Ingredients	Gram/Liter
Tryptone	10.00
Yeast extract	3.00
Dextrose	4.00
Dipotassium phosphate	2.50
Orange serum	9.00
pH (at 25°C)	5.5 ±0.2

***Formula adjusted for optimum performance and parameters**

Directions: Dissolve 28.50 grams in 1000 ml purified / distilled water. Heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes (Avoid overheating). Cool to 45-50°C. Mix well and pour into sterile test tube.

Specimens types analyzed

Food and dairy, clinical samples

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Precautions to be taken

All the handling, experiments, storage, and discarding should be performed with the help of trained and experienced technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Homogeneous Light orange beige free flowing powder
Color and clarity of set medium	Light cream colored, clear to slightly opalescent solution
Reaction of 2.85 % w/v aqueous solution	pH: 5.5 $\pm$ 0.2 at 25°C.
pH	5.30– 5.70 at 25°C
Growth Promotion Properties	Best at $\leq$ 100 CFU at 32-37°C for 18-72 h
Indicative Properties	Optimum at $\leq$ 100 CFU at 32-37°C for 18-72 h

Different Microbial Response:

Organism	ATCC	Inoculum	Growth	Incubation Temperature	Incubation period
Lactobacillus acidophilus	4356	50-100	Luxurious	33-37°C	18-72 hours
Saccharomyces cerevisiae	9763	50-100	Luxurious	25-30°C	18-72 hours
Aspergillus brasiliensis	16404	50-100	Luxurious	25-30°C	18-72 hours

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Note: Sterilize media immediately after reconstitution.

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Disposal: To avoid the contamination or propagation of any hazardous microbes used, unusable or modified preparation of this product must be disposed after autoclaving or incineration after completion of task.

Reference

1. American Public Health Association (1978), Standard Methods for the Examination of Dairy Products, 14th Ed., Washington D.C.
2. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), (2015), Standard Methods for the Examination of Water and Wastewater, Wastewater, 20th Ed., American Public Health Association, Washington, D.C.
3. Downes F. P. and Ito K., (Ed.), (2001), Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C.
4. Hays, G.L. (1951). The isolation, cultivation and identification of organisms which have caused spoilage in frozen concentrated orange juice. Proc. Florida State Hort. Soc., 54: 135.
5. Hays, G.L., and Reister, D.W. (1952). The control of "off-odor" spoilage in frozen concentrated orange juice. Food Tech., 6: 386-389.
6. Murdock, D.I., Folinazzo, J.F., and Troy, V.S. (1951). Evaluation of plating media for citrus concentrates. Food Tech., 6: 181- 185.

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