TM 1920 – ORANGE SERUM BROTH

INTENDED USE

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

PRODUCT SUMMARY AND EXPLANATION

Fruit juices are generally acidic, with pH values ranging from approximately 2.4 for lemon juice, to 4.2 for tomato juice. The low pH of these foods is selective for yeast, moulds and a few groups of aciduric bacteria. The microorganisms of greatest significance in citrus juices are the lactic acid bacteria, primarily species of *Lactobacillus* and *Leuconostoc*, yeast and moulds. Microbial spoilage of these citrus fruit juices is most commonly due to aciduric microbes such as lactic acid bacteria and yeast. The lactic acid bacteria include *Lactobacillus fermentum, L.plantarum* , and *Leuconostoc mesenteroides* . Orange Serum Agar Broth is recommended by APHA for cultivation of Lactobacilli and other aciduric organisms. Murdock and Brokaw employed Orange Serum Agar Broth for studies of sanitary control of the processing of citrus concentrates. Hays and Reister recommended Orange Serum Broth, pH 5.5 which is accepted as a control medium by the citrus industry since at this reaction, the medium is most productive for the growth of spoilage organisms. Dehydrated agar medium containing orange serum was reported by Stevens. Orange Serum Agar Broth is used to initiate growth of saprophytic, pathogenic fungi in small samples.

COMPOSITION

Ingredients	Gms / Ltr
Casein enzymic hydrolysate	10.000
Yeast extract	3.000
Dextrose	4.000
Dipotassium phosphate	2.500
Orange serum	9.000

PRINCIPLE

The medium consists of Casein enzymic hydrolysate which provides essential nitrogenous nutrients while dextrose serves as the fermentable carbohydrate and energy source. Yeast extract supplies B- complex vitamins, which stimulate growth. Orange serum provides an optimal environment for the recovery of acid tolerant microorganisms from citrus fruit products.

INSTRUCTION FOR USE

- Dissolve 28.5 grams in 1000 ml purified / distilled water.
- Heat if necessary to dissolve the medium completely.
- Dispense as desired and sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. AVOID OVERHEATING.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Cream to yellow homogeneous free flowing powder.

Appearance of prepared medium : Medium to dark amber coloured clear solution in tubes.

pH (at 25°C) : 5.5 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Incubation Temperature	Incubation Period
Aspergillus niger	16404	10-100	Good-luxuriant	35-37°C	40-48 Hours
Lactobacillus acidophilus	4356	50-100	Good-luxuriant	35-37°C	40-48 Hours
Lactobacillus fermentum	9338	50-100	Good-luxuriant	35-37°C	40-48 Hours
Leuconostoc mesentoroides	12291	50-100	Good-luxuriant	35-37°C	40-48 Hours
Saccharomyces cerevisiae	9763	10-100	Good-luxuriant	35-37°C	40-48 Hours
Candida albicans	10231	10-100	Good-luxuriant	35-37°C	40-48 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.

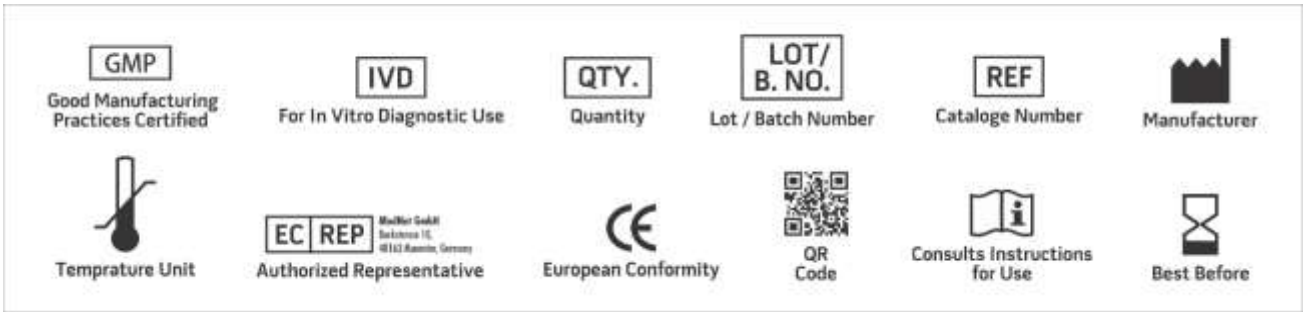
DISPOSAL

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

REFERENCES

1. 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.
2. Murdock P. I., Folinazzo J. F., and Troy V. S., 1951, Food Technol., 6:181.

3. Stevens J. W., 1954, Food Technol., 8:88.
4. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore
5. Murdock P. I. and Brokaw C. H., 1958, Food Technol., 12:573.



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

***For Lab Use Only**

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