Nutrient Agar w/ 1% Peptone

M012

Nutrient agar medium is used as a general purpose culture media which may be used as enriched medium by incorporating 10% blood or other biological fluid.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Sodium chloride	5.000
Beef extract	5.000
Agar	15.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 35 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well before pouring.

Principle And Interpretation

Nutrient Agar with 1% Peptone has almost double concentration of the nitrogen sources than that used in Nutrient Agar, making it more nutritive. Nutrient media are basic culture media used for maintaining microorganisms, cultivating fastidious organisms by enriching with serum or blood and are also used for purity checking prior to biochemical or serological testing (1, 2). It is one of the several non-selective media useful in routine cultivation of microorganisms (3, 4).

Beef extract and peptic digest of animal tissue provide the necessary nitrogen compounds, carbon, vitamins and also some trace ingredients to non-fastidious organisms like *Bacillus subtilis* and *Staphylococcus aureus* . Sodium chloride maintains osmotic equilibrium of the medium. With the addition of 10% v/v blood or other biological fluids like ascetic fluid, serum etc, this media is recommended for growing fastidious organisms.

Peptic digest of animal tissue and beef extract are nutritionally rich in supplying essential nitrogen and growth factors (5).

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium
Basal medium : Light yellow coloured clear to slightly opalescent gel. After addition of 5%v/v sterile defibrinated blood : Cherry red coloured opaque gel forms in Petri plates

Reaction
Reaction of 3.5% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH
7.20-7.60

Cultural Response
M012: Cultural characteristics observed with added 5% v/v sterile defibrinated blood, after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Growth w/ Blood	Recovery w/ Blood	Haemolysis
Cultural Response						

Neisseria meningitidis ATCC 13090	50-100	good	50-70%	luxuriant	>=70%	none
Staphylococcus aureus ATCC 25923	50-100	luxuriant	>=70%	luxuriant	>=70%	beta
Streptococcus pneumoniae ATCC 6303	50-100	good	50-70%	luxuriant	>=70%	alpha
Streptococcus pyogenes ATCC 19615	50-100	good	50-70%	luxuriant	>=70%	beta
Staphylococcus aureus ATCC 6538	50-100	luxuriant	>=70%	luxuriant	>=70%	beta

Storage and Shelf Life

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

Reference

1.Lapage S., Shelton J. and Mitchell T., 1970, Methods in Microbiology', Norris J. and Ribbons D., (Eds.), Vol. 3A, Academic Press, London.
2. MacFaddin J. F., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd Ed., Lippincott, Williams and Wilkins, Baltimore.
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. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
5. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore

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