



Nutrient Agar for Oxidase

M1274

Nutrient Agar is used for confirmation of presence of oxidase in microorganisms in water.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	1.000
Meat extract	1.000
Sodium chloride	5.000
Agar	15.000
Final pH (at 25°C)	7.3±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 22 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 and pour into sterile Petri plates.

Principle And Interpretation

Nutrient Agar is recommended by APHA (1) for differentiation of the coliform bacteria on the basis of presence of enzyme cytochrome oxidase. It is also recommended by ISO Committee (2) for the same. Cytochrome oxidase is a iron-containing porphyrin enzyme that participates in the electron transfer mechanisms and in the nitrate metabolic pathways of some bacteria. Although the test can be performed by flooding the agar surface of an inoculated plate with the reagent after incubation or with the help of oxidase reagent impregnated filter paper.

Peptic digest of animal tissue and meat extract provide nitrogenous compounds, carbon, sulphur and trace ingredients. Sodium chloride maintains osmotic equilibrium.

Nutrient Agar plates are streak inoculated to obtain isolated colonies. The isolated colony is used for oxidase testing on an impregnated filter paper. A dark purple colour that develops within 10 seconds is a positive oxidase test. Coliform bacteria are oxidase negative.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of Prepared medium

Yellow coloured clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 2.2% w/v aqueous solution at 25°C. pH : 7.3±0.2

pH

7.10-7.50

Cultural Response

M1274: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Growth	Oxidase
Cultural Response		
<i>Aeromonas hydrophila</i>	luxuriant	positive
ATCC 7966		reaction, deep purple blue colour develops

		within 10 seconds
<i>Escherichia coli</i> ATCC 25922	luxuriant	negative reaction
<i>Enterobacter aerogenes</i> ATCC 13048	luxuriant	negative reaction
<i>Pseudomonas aeruginosa</i> ATCC 27853	luxuriant	positive reaction, deep purple blue colour develops within 10 seconds
<i>Vibrio cholerae</i> ATCC 15748	luxuriant	positive reaction, deep purple blue colour develops within 10 seconds

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. Greenberg A. E., Clesceri L. S. and Eaton A. D., (Eds.), 1992, Standard Methods for the Examination of Water and Wastewater, 18th Ed., APHA, Maryland.
2. International Organization for Standardization (ISO), 1990, Draft, ISO/DIS 9308-1.

Revision : 2 / 2015

Disclaimer :

User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.