



Urea Agar Base (Filter sterilizable)(w/o Agar)

M112A

Intended Use:

With added agar it is used for detection of urea splitting microorganisms.

Composition**

Ingredients	g / L
Dextrose (Glucose)	1.000
Peptone	1.000
Sodium chloride	5.000
Potassium dihydrogen phosphate	2.000
Urea	20.000
Phenol red	0.012
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 29.01 grams in 100 ml purified/distilled water. Mix thoroughly to dissolve completely. Sterilize by filtration. **DO NOT BOIL OR AUTOCLAVE.** Suspend 15.0 grams of agar in 900 ml distilled water and dissolve completely by boiling. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and mix with 100 ml filter sterilized basal medium. Mix well and aseptically dispense in sterile tubes to prepare a 3 cm slant and 2 cm deep butt. Do not heat or overheat the medium as urea gets decomposed very easily.

Principle And Interpretation

Urea Agar Base is formulated in accordance with Christensen formulation (1,2). Rustigian and Stuart (3) had originally formulated a medium to detect urease activity. However these media differentiate between rapid urease positive *Proteus* species and other urease positive organisms like *Citrobacter*, *Enterobacter* and *Klebsiella* and bacteria other than *Enterobacteriaceae*. Christensen observed that addition of peptone, dextrose and reduced content of buffer helps to support an early luxuriant growth.

Heavy inoculum of growth is inoculated on the surface of the slants. When urea is utilized, ammonia is formed during incubation which makes the medium alkaline, showing a pink-red colour by the change in the phenol red indicator. Prolonged incubation may cause alkaline reaction in the medium. Check using medium without urea as the negative control.

Type of specimen

Isolated microorganism from clinical, food and water samples.

Specimen Collection and Handling

For food samples, follow appropriate techniques for sample collection and processing as per guidelines (4).

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards

(5). For clinical samples follow appropriate techniques for handling specimens as per established guidelines (6,7). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use. For professional use only. Read the label before opening the container. Wear protective gloves/ protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. Prolonged incubation may cause alkaline reaction in the medium.
2. Also, all urea test media rely on the alkalinity formation and so they are not specific for determining the absolute rate of urease activity (7).
3. The utilization of proteins may raise the pH to alkalinity due to protein hydrolysis and excess of amino acids liberation results in false positive reaction.

Quality Control

Appearance

Light orange coloured homogeneous free flowing powder

Colour and Clarity of prepared medium

Orange coloured clear to slightly opalescent gel as slants.

Reaction

Reaction of the Basal Medium (2.9% w/v aqueous solution) at 25°C. pH : 6.8±0.2

pH

6.60-7.00

Cultural Response

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

Organism	Growth	Urease
<i>Escherichia coli</i> ATCC 25922 (00013*)	good-luxuriant	Negative reaction, no change
# <i>Klebsiella aerogenes</i> ATCC 13048 (00175*)	good-luxuriant	Negative reaction, no change
<i>Klebsiella pneumoniae</i> ATCC 13883 (00097*)	good-luxuriant	Weakly positive
## <i>Proteus hauseri</i> ATCC 13315	good-luxuriant	Positive reaction, cerise colour
<i>Salmonella</i> Typhimurium ATCC 14028 (00031*)	good-luxuriant	Negative reaction, no change

Key : *Corresponding WDCM numbers,

Formerly known as *Enterobacter aerogenes*

Formerly known as *Proteus vulgaris*

Storage and Shelf Life

Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (6,7).

Reference

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- MacFaddin J., 1980, Biochemical Tests for Identification of Medical Bacteria, 2nd ed., Williams and Wilkins, Baltimore.
- Rustigian and Stuart, 1941, Proc. Soc. Exp. Biol. Med., 47:108.
- Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
- Lipps WC, Braun-Howland EB, Baxter TE, eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.
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7.Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015)Manual of Clinical Microbiology, 11th Edition. Vol. 1.

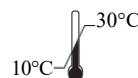
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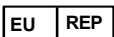
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**In vitro diagnostic
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Storage temperature



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**Do not use if
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