TM 1113 - UREA AGAR ABSE (CHRISTENSEN)

INTENDED USE

For detection of urease production, particularly by *Proteus vulgaris*, Micrococci & paracolon organisms.

PRODUCT SUMMARY AND EXPLANATION

Urea Agar is used to detect urease production. Urea Agar described by Christensen detected urease activity by all rapidly urease-positive Proteus organisms and also by other members of *Enterobacteriaceae* that exhibited a delayed urease reaction. This was accomplished by

a) Adding glucose to the medium

b) Decreasing the peptone concentration, and

c) Decreasing the buffering system, as a less buffered medium detects even smaller amount of alkali.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	1.000
Agar	15.000
Phenol red	0.012
Sodium chloride	5.000
Dextrose (Glucose)	1.000
Disodium phosphate	1.200
Monopotassium phosphate	0.800

PRINCIPLE

Peptone is the source of essential nutrients. Dextrose is the energy source. Sodium chloride maintains the osmotic equilibrium of the medium whereas phosphates serve to buffer the medium. Urea is hydrolyzed to liberate ammonia. Phenol red indicator detects the alkalinity generated by visible colour change from orange to pink.

Prolonged incubation may cause alkaline reaction in the medium. A medium without urea serves as negative control to rule out false positive results. Also, all urea test media rely on the alkalinity formation and so they are not specific for determining the absolute rate of urease. 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.

INSTRUCTION FOR USE

- Dissolve 24.01 grams in 950 ml distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 10 psi pressure (115°C) for 20 minutes.
- Cool to 45-50°C and aseptically add 50 ml of sterile 40% Urea Solution and mix well.
- Dispense into sterile tubes and allow to set in the slanting position.
- Do not overheat or reheat the medium as urea decomposes very easily.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to light pink homogeneous free flowing powder
Appearance of prepared medium : Yellowish orange coloured clear to slightly opalescent gel forms in tubes as slants.
pH (at 25°C) : 6.8 ±0.2

INTERPRETATION

Cultural characteristics observed on addition of sterile 40% Urea Solution after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Urease	Incubation Temperature	Incubation Period
Escherichia coli	25922	50-100	Negative reaction, no change	35-37°C	18-24 Hours.
Klebsiella pneumoniae	13883	50-100	Positive reaction, cerise colour	35-37°C	18-24 Hours.
Proteus mirabilis	25933	50-100	Positive reaction, cerise colour	35-37°C	18-24 Hours.
Proteus vulgaris	13315	50-100	Positive reaction, cerise colour	35-37°C	18-24 Hours.

PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE

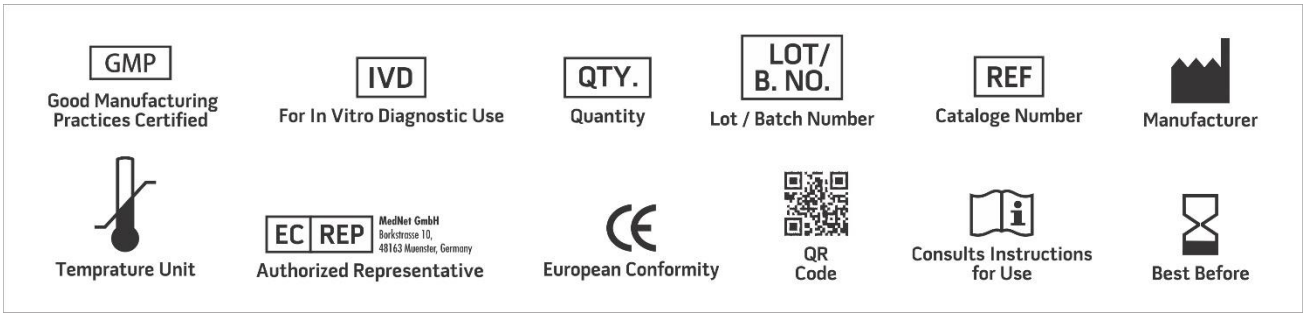
Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided 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. Christensen W. B., 1946, J. Bacteriol., 52:461.
2. MacFaddin J. F., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd Ed., Williams and Wilkins, Baltimore. Md.
3. Farmer J. J. III, McWhorter A. C., Huntley G. A., Catignani J., J. Clin. Microbiol. 1975: 1 (1): 106-107.
4. MacFaddin J. F, 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. 1, Williams and Wilkins, Baltimore, Md.



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

***For Lab Use Only**

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