CM 22161 – UREA AGAR BASE (CHRISTENSEN) (IS:5887 (Part-I)-1976)

INTENDED USE

Fordetectionofureaseproduction,particularlyby Proteus vulgaris, Micrococci & paracolon organisms.

PRODUCT SUMMARY AND EXPLANATION

Urea Agar Base, Christensen was developed to detected urease activity by all rapidly urease-positive Proteus organisms and also by other members of Enterobacteriaceae that exhibited a delayed urease reaction. This is 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.
ISO Committee has recommended Urea Agar Base, Christensen, with one phosphate, instead of two phosphates for detection of rapid urease activity. Heavy inoculum of growth is inoculated on the surface of the slants. On incubation urea is utilized to form ammonia, 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.

COMPOSITION

Ingredients	Gms / Ltr
Peptone	1.000
Dextrose (Glucose)	1.000
Sodium chloride	5.000
Potassium dihydrogen phosphate	2.000
Phenol red	0.012
Agar	15.000

PRINCIPLE

Themediumconsists of Peptone which is the source of nitrogen and carbon, long chain amino acids, vitamins and other 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.

INSTRUCTION FOR USE

Dissolve 24.01 gramsin 950 ml purified / 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 a 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

Culturalcharacteristics observed on addition of 40% Urea Solution after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Urease	Incubation temperature	Incubation Period
Escherichia coli	25922	50-100	Luxuriant	Negative reaction, no change	35-37°C	18-24 Hours
Proteus mirabilis	25923	50-100	Luxuriant	Positive reaction, pink colour	35-37°C	18-24 Hours
Salmonella Typhimurium	14028	50-100	Luxuriant	Negative reaction, no change	35-37°C	18-24 Hours
Proteus vulgaris	13315	50-100	Luxuriant	Positive reaction, pink colour	35-37°C	18-24 Hours
Klebsiella aerogenes	13048	50-100	Luxuriant	Negative reaction, no change	35-37°C	18-24 Hours
Klebsiella pneumoniae	13883	50-100	Luxuriant	Positive reaction, pink colour	35-37°C	18-24 Hours

PACKAGING:

Inpacksizeof100 gm and 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. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
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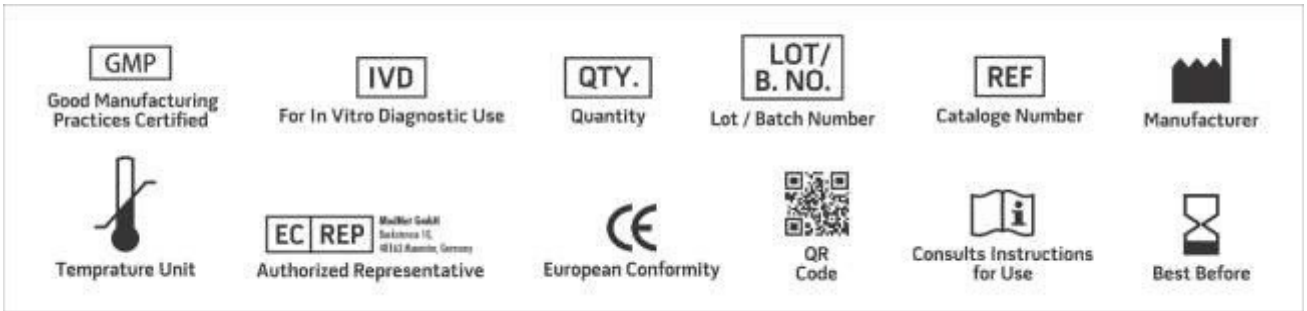
3. Christensen W. B., 1946, J. Bacteriol., 52:461.
4. Farmer J. J. III, McWhorter A. C., Huntley G. A., Catignani J., J. Clin. Microbiol. 1975: 1 (1): 106-107.
5. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.
6. 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.
7. International Organization for Standardization (ISO), ISO 6579-1:2017.



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