Urea Agar Base Concentrate

- For in vitro use only -

Catalogue No.

VU80-10 Urea Agar Base Concentrate [10-mL / 100-mL] (Liquid)

Our Urea Agar Base Concentrate is a sterile preparation used in the production of urea agar or urea broth. The completed mediums are used for the differentiation of organisms, especially *Enterobacteriaceae*, on the basis of urease production.

The Urea Agar Base Concentrate contains pancreatic digest of gelatin and dextrose which provide the organisms with amino acids and other growth factors that are essential for growth. The presence of potassium phosphate acts as a buffering agent which minimizes pH changes until sufficient acid or alkaline by-products are released from bacterial growth. Urea is the active substrate used in the detection of the bacterial enzyme urease, when urea is utilized the alkaline end product, ammonia, is formed. When sufficient ammonia is released the pH of the medium becomes alkaline which is detected by the presence of the color indicator, phenol red, which changes from yellow to bright pink.

Active Ingredients per 10-mL Vial
(Each vial prepares 100-mL of finished media)

Pancreatic digest of gelatin ..... 0.1 g
Dextrose …..... 0.1 g
Sodium chloride ..... 0.5 g
Potassium phosphate ..... 0.2 g
Urea ..... 2.0 g
Phenol red …..... 1.2 mg

Recommended Method of Media Preparation

Urea Agar Preparation

1. Allow one 10-mL vial of Urea Agar Base Concentrate time to warm to room temperature prior to its addition.
2. To prepare urea agar, add 1.7-g of agar into 90-mL of purified water in a flask. Mix and sterilize according to the manufacturer's instructions. At this point you should sterilize any tubes, caps, and dispensing equipment required.
3. Cool the sterilized agar base to approximately 50°C. Aseptically add the 10-mL of Urea Agar Base Concentrate to the flask. Incorporate thoroughly by swirling.
4. Aseptically, dispense the completed medium into sterile tubes.
5. Cap tubes and allow medium to cool in a slanted position to obtain urea agar slants.

Urea Broth Preparation

1. Allow one 10-mL vial of Urea Agar Base Concentrate time to warm to room temperature prior to its addition.
2. To prepare urea broth, sterilize 90-mL of purified water in a flask. At this point you should sterilize any tubes, caps, and dispensing equipment required.
3. Cool the purified water to room temperature and aseptically add the 10-mL of Urea Agar Base Concentrate to the flask. Incorporate thoroughly by swirling.
4. Aseptically, dispense the completed medium as desired into sterile tubes.
5. Cap tubes.

Quality Control

The following organisms are used to determine the performance of the completed medium. Inoculate and incubate at 35°C in an aerobic environment for up to 24 hours.

Organism	Expected Results
Proteus mirabilis ATCC 12453	Growth, urease positive (bright pink color change)
Escherichia coli ATCC 25922	Growth, urease negative (no color change or yellow)

- *Do not flash defrost Urea Agar Base Concentrate as heat is detrimental to some components of this supplement*

Storage and Shelf Life

Our liquid Urea Agar Base Concentrate has a shelf life of 26 weeks from the date of manufacture when stored at 4 to 8ºC.

References

1. Christensen WB. Urea decomposition as a means of differentiating Proteus and paracolon cultures from each other and from Salmonella and Shigella types. J Bacteriol 1946; 52:461-6.
2. MacFaddin JF. Media for isolation-cultivation-identification-maintenance of medical bacteria, vol I. Baltimore, MD: Williams and Wilkins, 1985.
3. MacFaddin JF. Media for isolation-identification-maintenance of medical bacteria, vol 1. Baltimore, MD: Williams and Wilkins, 2000.

Original: August 2005 Updated: January 2010 Checked: January 2014