



RAPID UREA BROTH

- For in vitro use only -

Catalogue No. TU75

Our Rapid Urea Broth is used to differentiate between *Enterobacteriaceae* based on their ability to hydrolyze the substrate urea.

Urease is an important microbial enzyme concerned with the decomposition of organic compounds. Urease can act on the test substrate, urea, contained in the medium resulting in the release of ammonia. The release of this alkaline end product results an increase in the pH that is detected by the color indicator phenol red. A positive urease test results in the medium changing from yellow to pinkish-red.

Our formulation is based on the work of Ewing who devised this medium for the rapid differentiation of enteric bacilli. This medium can be used to detect urease activity by organisms that display a rapid-urease reaction such as *Proteus* species as well as organisms that exhibit a delayed urease reaction such as *Klebsiella* species.

Formula per Litre of Medium

Yeast Extract 0.1 g
Potassium Phosphate Monobasic0.091 g
Sodium Phosphate Dibasic 0.095 g
Phenol red0.01 g
Urea20.0 g

pH 6.9 ± 0.2

Recommended Procedure

1. Allow medium to adjust to room temperature prior to inoculation.
2. Obtain growth from an 18 to 24-hour pure culture.
3. Heavily inoculate broth.
4. Shake tube gently to resuspend the bacteria.
5. Incubate aerobically in a waterbath at 35°C.
6. Observe after 10 minutes, 1 hour, and 2 hours.

Interpretation of Results

Positive (+): Pink to cherry red color change

Negative (-): No color change or yellow color

- Do not expose medium to excessive, exogenous heat sources since urea decomposes on heating

Quality Control

After checking the medium for correct pH, colour, depth, and sterility, the following organisms are used to determine the performance of the completed medium.

Organism	Expected results	
<i>Proteus mirabilis</i> ATCC 12453	+ve	Bright pink color change
<i>Escherichia coli</i> ATCC 25922	-ve	No color change

Storage and Shelf Life

Our Rapid Urea Broth should be stored in an upright position at 4°C to 8°C. Under these conditions the medium has a shelf life of 6 weeks from the date of manufacture.

References

1. Ewing WH. *Enterobacteriaceae*. Biochemical methods for group differentiation. US Pub Health Service Public No. 174.
2. MacFaddin JF. Media for isolation-cultivation-maintenance of medical bacteria, Vol I. Baltimore: Williams & Wilkins, 1985.

3. MacFaddin JF. Biochemical Tests for Identification of Medical Bacteria. 3rd ed. Lippincott Williams and Wilkins. Philadelphia, 2000.

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