

## Technical Data Sheet

# CE Urea broth

Ordering number: 1.08483.0500

Differential medium proposed by Rustigian and Stuart (1941) for detecting microorganisms which metabolize urea.

This medium is especially useful for the differentiation of *Proteus* species from *Salmonella* and *Shigella* species in the enteric infection diagnosis.

**IVD** in vitro diagnosticum - For professional use only

### Mode of Action

This culture medium only supports the growth of microorganisms such as *Proteus*, which utilize urea as their sole carbohydrate source (Stuart et al. 1945, Cook 1948). Ferguson and Hook (1943) recommend this medium for differentiating between *Proteus* and *Salmonella*. It can also be used to differentiate between bacilli and sarcines. Microorganisms which metabolize urea cause the indicator to change its color to red and the medium may become turbid as a result of microbial growth.

### Typical Composition

Yeast Extract	0.1 g/l
KH <sub>2</sub> PO <sub>4</sub>	9.1 g/l
Na <sub>2</sub> HPO <sub>4</sub>	9.5 g/l
Urea	20 g/l
Phenol Red	0.01 g/l

### Preparation

Suspend 38.5 g/l. If necessary heat up to a temperature of 60 °C. Sterilize by filtration or dispense aliquots of approx. 3 ml into test tubes and sterilize for 5 min in a current of steam under mild conditions.

#### **Do not autoclave.**

The appearance of the prepared broth is clear and orange-red.

The pH of the single-strength broth at 25 °C is in the range of 6.6 -7.0.

If filter sterilization or heat sterilization is not possible, the medium must be inoculated as soon as it has been prepared.

## Experimental Procedure and Evaluation

Inoculate the medium massively with the pure culture under investigation.

Incubation: up to 48 h at 35 °C.

Appearance of Medium	Microorganisms
Red	Urea-positive: <i>Proteus</i> ( <i>Proteus hauseri</i> , <i>Proteus mirabilis</i> ), <i>Morganella</i> , <i>Retzgerella</i> and others
Yellow	Urea-negative or weakly positive: <i>Shigella</i> , <i>Escherichia</i> , <i>Salmonella</i> , <i>Citrobacter</i> , <i>Enterobacter</i> , <i>Klebsiella</i> , <i>Serratia</i> , <i>Providencia</i> and others

## Storage

Usable up to the expiry date when stored dry and tightly closed at +15 to +25° C. Protect from light.

After first opening of the bottle the content can be used up to the expiry date when stored dry and tightly closed at +15 to +25° C.

## Specimen

e.g. Isolated bacteria from, stool, urine, .

Clinical specimen collection, handling and processing. See general instructions of use.

## Quality Control

Control Strains	ATCC #	Incubation	Expected Results
<i>Escherichia coli</i>	25922	48 h at 35 °C	No color change to red
<i>Salmonella typhimurium</i>	14028	48 h at 35 °C	No color change to red
<i>Klebsiella pneumoniae</i>	13883	48 h at 35 °C	No color change to red
<i>Proteus hauseri</i>	13315	48 h at 35 °C	Color change to red
<i>Proteus mirabilis</i>	14153	48 h at 35 °C	Color change to red
<i>Proteus rettgeri</i>	29944	48 h at 35 °C	Color change to red

Please refer to the actual batch related Certificate of Analysis.

## Literature

Cook, G.T. (1948). Urease and other biochemical reactions of the *Proteus* group. J. Path. Bact., **60**: 171-181.

Ferguson, W.W. and Hook, A.E. (1943). Urease activity of *Proteus* and *Salmonella* organisms. J. Lab. Clin. Med. **28**: 1715-1720.

Finegold and Baron, 1986, Bailey and Scotts Diagnostic Microbiology, 7th ed., The C.V. Mosby Co., St. Louis.

Rustigian, R. and Stuart, C.A. (1941). Decomposition of urea by *Proteus*. Proc. Soc. Exptl. Biol. Med., **47**: 108-112.

Stuart, C.A., Van Stratum, E. and Rustigian, R. (1945). Further studies on urease production by *Proteus* and related organisms. J. Bact., **49**: 437-444.



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## Ordering Information

Product	Cat. No.	Pack size
Urea broth	1.08483.0500	500 g

Merck KGaA, 64271 Darmstadt, Germany  
Fax: +49 (0) 61 51 / 72-60 80  
mibio@merckgroup.com  
[www.merckmillipore.com/biomonitoring](http://www.merckmillipore.com/biomonitoring)

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