

## SER: Urine - Test for Urea

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**Principle** Urea is the chief product of protein metabolism and is found in high concentrations in urine.

This is a screening test for the presence of urine.

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**Equipment and Supplies** This procedure uses the following laboratory equipment and supplies:

- balance
  - filter paper
  - Pasteur pipettes
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**Reagents** This procedure uses the following reagents:

- Bromothymol Blue solution
    - Dissolve 40 milligrams of bromothymol blue in 10 mL of deionized water.
  - Urease solution
    - Dissolve 10 milligrams of urease in 4 mL of deionized water. This reagent must be made fresh daily.
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**Filter paper preparation** Use the following procedure to prepare a batch of filter papers.

Step	Action
1	Cut filter paper into approximately 1.5 inch squares
2	Place one drop of <i>Bromothymol Blue solution</i> on each piece of filter paper, allow it to dry.
3	Test each batch of filter papers with a positive control (urine) and a negative control (water). If the paper does not give the proper results, discard.
4	Label each batch of filter papers with the preparer's initials and date.
5	Store the prepared filter paper in a $-20^{\circ}\text{C} \pm 10^{\circ}\text{C}$ freezer.

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## SER: Urine - Test for Urea, Continued

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**Quality control** The prepared filter paper must be tested on a positive control (urine) and a negative control (water) each day of use. The results of these tests are recorded in the examination documentation.

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**Records** Records documenting the preparation and quality control testing of the filter papers will be kept in the *Biology Quality Control Log Book*.

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**Sample preparation** Remove an area of the suspected urine stain.

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**Procedure** Use the following procedure to test for urea.

Step	Action
1	Put a cutting from the suspected urine stain in the middle of the prepared filter paper.
2	Add one drop of deionized water.  Note: a blue color change at this step indicates a false positive result.
3	Add one drop of <i>Urease solution</i> over the cutting.

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**Interpretation** The rapid development of a blue color is a positive (+) result for the presence of urea.

The absence of the blue color is a negative (-) result for the presence of urea.

In addition to the results of the test, the presence of urine may be supported by odor and visualization with an alternate light source.

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