

K710650 CRYPTO-UREASE SWABS

PRINCIPLE / DISCUSSION:

Cryptococcus infections were once rare and mostly seen in chronically ill patients suffering from lymphoma or corticosteroid therapy. *Cryptococcus neoformans* has become more common with the onset of the AIDS pandemic. Clinical manifestations range from localized lung disease to widespread dissemination including CNS. The rapid identification of this organism is essential for adequate administration of therapy. Detection of urease has long been used as a screen although many other yeasts will also hydrolyze urea. These yeasts are easily differentiated from *Cryptococcus* by their colony pigmentation (*Rhodotorula*), hyphae or pseudohyphae (*Trichosporon* and *Candida*). Other urease positive *Cryptococcus* species other than *C. neoformans* are rarely isolated from clinical specimens. Most commercially available urea tests require up to five days. Crypto-Urease Swabs react in as little as 10 minutes to detect the urease activity. The test is based on detection of ammonia resulting from the hydrolysis of urea, which causes a color change to a deep fuchsia-pink, while negative tests remain yellow.

MATERIAL SAFETY DATA:

Crypto-Urease Swabs contain urea, buffered to a neutral pH. Urea is considered non-hazardous. All tests should be done by qualified personnel only and used tests should be discarded in laboratory hazardous waste.

STORAGE:

Swabs should be stored frozen at <0C.

MATERIALS REQUIRED:

Crypto-Urease Swabs are provided 30 per container (sufficient for 10 tests conducted with positive and negative controls with each usage.) Usage requires a pure 24-48 hour culture of the organism on a low-dextrose or yeast starvation medium such as Emmons SDA. Distilled water, pH 6.8 to 7.2 and a small test tube, e.g. 10X75mm are required but not provided.

PROCEDURE:

- 1) Add 5 drops of neutral pH water to a small test tube.
- (2) Harvest 5-8 colonies (a visible paste of the test yeast) using the swab.
- (3) Place the swab into the tube and incubate at @35-37C for up to 6 hours.

INTERPRETATION:

Development of a deep pink at any time during the incubation is a positive test. Hold negative tests for 6 hours

QUALITY CONTROL:

Always include a positive and negative control with each run. Any known positive and negative organism may be used. We routinely use as follows:

Negative: *Candida albicans*, ATCC 36232

Positive: *Cryptococcus neoformans*, ATCC 13690

LIMITATIONS:

1. Media with high dextrose concentration (such as SDA) may give false negative or delayed results. Crypto-Urease is intended to assist in presumptive identification of *C.neoformans* and should not be used to determine bacterial urease activity.

REFERENCES:

1. Canteros, Rodero, Rivas, and Davel, 1996 *A rapid urease test for presumptive identification of Cryptococcus*, Mycopathologia 136:21-23 1996,
2. B.L. Zimmer, Glenn D. Roberts, Sept. 1979 *Rapid selective urease test for presumptive identification of Cryptococcus neoformans* " Journal of Clinical Microbiology, page 380-381
3. Murray, Barron, Jorgensen, Landry, and Pfaller, 2009 Manual of Clinical Microbiology page 1765-1766



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