



CATSCREEN™

Cat. no. Z110	CatScreen™	25 tests/kit
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INTENDED USE

Hardy Diagnostics CatScreen™ is a rapid test for the detection of the enzyme butyrate esterase in bacteria isolated on culture media for the presumptive identification of *Moraxella (Branhamella) catarrhalis*.

SUMMARY

The CatScreen™ is used to confirm the identification of *Moraxella (Branhamella) catarrhalis* when used in conjunction with chromogenic substrate tests or carbohydrate fermentations, oxidase reaction, Gram stain and morphology. For presumptive identification of *M. catarrhalis*, the CatScreen™ may be used along with the oxidase reaction, gram stain and colony morphology.⁽⁵⁾

The value of tributyrin hydrolysis for differentiating *M. catarrhalis* from *Neisseria* spp. was first reported by Berger in 1962. Subsequently, several authors have reported the usefulness of butyrate esterase in differentiating the two organisms using various substrates.⁽⁵⁾ Butyrate hydrolysis is listed in standard reference texts as a key test in differentiating *M. catarrhalis* from *Neisseria* spp.^(1,4,6)

Disks impregnated with bromo-chloro-indolyl butyrate serve as the substrate for the detection of butyrate esterase. Hydrolysis of the substrate by the butyrate esterase yields a chromogenic compound which appears blue to blue-green in color.

REAGENT FORMULA

The CatScreen™ Kit contains 25 disks impregnated with 0.35% bromo-chloro-indolyl butyrate in a volatile organic solvent, followed by desiccation.

STORAGE AND SHELF LIFE

Upon receipt store at -20°C, in the dark. This product should not be used if there are any signs of deterioration, contamination, or if the expiration date has passed. Protect disks from light and moisture. Leave desiccant in vial.

PRECAUTIONS

PROCEDURE

Specimen Collection: This product is not intended for primary isolation of patient specimens. This product is used in conjunction with other biochemical tests to identify cultures of isolated organisms.

The appropriate organism for performing the butyrate test is an oxidase-positive, gram-negative diplococcus exhibiting typical morphology of *Moraxella (Branhamella) catarrhalis*.

Method:

1. Remove disk from vial and place on a clean glass slide or petri dish lid.
2. Add one drop of distilled or deionized water to moisten the disk.
3. Obtain a heavy, visible inoculum with a sterile wooden applicator stick or loop from a 24-72 hour old culture and rub it onto the disk.
4. Incubate at room temperature (15-30°C.) for up to 5 minutes.

INTERPRETATION OF RESULTS

A positive test resulting in a blue to blue-green color within 5 minutes indicates the hydrolysis of bromo-chloro-indolyl butyrate by butyrate esterase. A negative test is indicated by no color change.

Incubation for slightly longer periods may yield false-positive results. Do not read after 5 minutes.

LIMITATIONS

Non-human species of *Branhamella* subgenus *Moraxella* are butyrate esterase-positive.

Some strains of the subgenus *Moraxella* (bacilli) may give a positive or weak positive reaction.

Unrelated organisms such as staphylococci and pseudomonads may also give positive results.

False-negatives may result from using too small an inoculum.

MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as loops, other culture media, swabs, applicator sticks, incinerators, and incubators, etc., as well as serological and biochemical reagents, are not provided.

QUALITY CONTROL

Test Organisms	Reaction
<i>Moraxella (Branhamella) catarrhalis</i> ATCC® 25240	Positive: Development of blue to blue-green color change within 5 minutes
<i>Neisseria gonorrhoeae</i> ATCC® 43069	Negative: Does not turn blue within 5 minutes

USER QUALITY CONTROL

PHYSICAL APPEARANCE

Disk should appear white with no visible blue color.



CatScreen™ Disk (Cat. no. Z110) - **Positive:** *Moraxella* (*Branhamella*) *catarrhalis* (ATCC® 25240)



CatScreen™ Disk (Cat. no. Z110) - **Negative:** *Neisseria gonorrhoeae* (ATCC® 43069)

PERFORMANCE CHARACTERISTICS

The laboratory study included 110 previously identified *M. catarrhalis* clinical isolates plus ATCC®25240. (Total 111 *M. catarrhalis*

isolates tested.) A side by side comparison was made and recorded with our CatScreen™ and the predicate device - Carr Scarborough's M. cat Butyrate Disc. In addition, 14 negative controls were tested including *Neisseria caviae*, *N. meningitidis*, *N. gonorrhoeae*, *N. sicca*, *N. canis*, *N. flavescens* and *N. subflava*. Of the *B. catarrhalis* organisms tested, 13% were beta-lactamase negative. *Neisseria caviae* (ATCC® 14659) gave a weak positive reaction on both Hardy Diagnostics and Carr Scarborough's disks (false-positive). Overall performance of the disks is as follows:

Relative Sensitivity - 92.9%

Relative Specificity - 100%

REFERENCES

1. Anderson, N.L., et al. *Cumitech 3B; Quality Systems in the Clinical Microbiology Laboratory*, Coordinating ed., A.S. Weissfeld. American Society for Microbiology, Washington, D.C.
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3. Berger, U. 1962. Uber die spaltung von tributyrin durch Neisseria. *Arch Hyg. Bakteriol.* ; 146:388-391.
4. Isenberg, H.D. *Clinical Microbiology Procedures Handbook*, Vol. I, II & III. American Society for Microbiology, Washington, D.C.
5. Janda, W.M. and P. Ruther. 1989. B. CAT CONFIRM; A rapid test for confirmation of *Branhamella catarrhalis*. *J. Clin. Microbiol.* ; 27:1390-1391.
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7. Versalovic, J., et al. *Manual of Clinical Microbiology*. American Society for Microbiology, Washington, D.C.
8. Perez, J.L., et al. 1990. Butyrate esterase (tributyryn) spot test, a simple method for immediate identification of *Moraxella* (*Branhamella*) *catarrhalis*. *J. Clin. Microbiol.* ; 28: 2347-2348.

ATCC is a registered trademark of the American Type Culture Collection.

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