Polysciences, Inc.
Chemistry beyond the ordinary

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Rapid Bacterial Test Strips

Polysciences, Inc. provides eight types of ready-to-use, convenient filter paper strips which are utilized for variety of standard microbiological tests. The various strips are saturated with reagents specific for each particular analysis. The following Rapid Bacterial Test Strips are CE marked*

Bacti Strips *(Cat. #24642)*

Bacti Strips provide a convenient method for the detection of urinary infections.

Urine testing is a very important part of many laboratory facilities. Collection procedures have been shown to cause contamination of previously sterile urine. There are multiple methods for assessing the amount of bacteria present in urine. Techniques range from simple culturing to the use of elaborate and expensive machinery.

One of the more simple and cost-effective techniques involves the use of sterile paper strips. These strips are used to plate urine samples onto media for quantitative measurement.

Procedure

1. Use an agar plate containing an appropriate culture medium. Maconkey Agar without salt or CLED, which moderate the growth of *Proteus spp.* are recommended.

2. Visibly mark a grid on the bottom of the plate to aid in positioning and future identification of each specimen. Up to 13 specimen can usually fit on one plate.

3. Remove a strip from the container, taking care to maintain it's sterility and dip the strip up to the marked line into the urine sample. Remove the strip from the sample, allowing the excess fluid to drain back into the sample container.

4. Press the damp end of the strip onto the agar and allow it to remain there for a few seconds, then discard the strip.

5. Incubate the plate aerobically overnight at 35-37° C.

6. Count the number of colonies on each area and report as indicated below:

Colonies on test area	Probable significance
20-30 colonies	Positive, indicates probable bacteriuria
5-20 colonies	Inconclusive
<5 colonies	Negative. No infection evident.

Beta Strips *(Cat. #24641)*

Beta Strips are used in rapid tests for the identification of penicillin resistant bacteria.

These strips detect the presence of a specific enzyme (β-lactamase) in bacteria including pathogens such as *Staphylcoccus aureus, Neisseria gonorrhoeae, Branhamella catarrhalis* and *Haemophilus influenzae*.

The test strip is impregnated with Benzylpenicillin and the indicator is bromocresol purple. Benzylpenicillin is hydrolyzed by β-lactamase, producing penicilloic acid. The reduced pH caused by the acid triggers the indicator (bromocresol purple) to change from purple to yellow. This test can be done as soon as there is visible growth on the primary culture plate. Results generally occur within 5 minutes!

Procedure

Using wire or plastic loop, touch 2 or 3 colonies of test organism on agar medium. Smear organism onto strip. Positive reaction shown by smeared zone changing from purple to yellow within 5 minutes.

Strips maintain a shelf life of 12 months.

E. Coli Strips *(Cat. #24638)*

E. Coli Strips are a useful rapid diagnostic test for tryptophan hydrolysis by *E.coli* found in urine samples.

E.coli accounts for up to 80% of urinary tract infections. The strips are based on the indole test by Vracko and Sherris. Certain bacteria, particularly *E.coli*, will break down tryptophan to produce indole, pyruvate and ammonia. The strip is impregnated with p-dimethylamino-cinnamaldehyde (DMACA) which reacts with indole molecules and produces a distinct colored compound. DMACA is more sensitive than traditional Ehlrich's or Kovac's reagents and allows for more rapid detection of indole.

Procedure

The strips are utilized by touching 2 or 3 colonies of the test organism found on an agar medium with a wire or plastic loop and smearing the organism onto a strip. A positive result is indicated within 30 seconds by the smeared area turning green-brown.

Strips maintain a shelf life of 12 months.

*CE-marked and conforms to: European In Vitro Devices Directive, In Vitro Diagnostic Medical Devices Directive (98/79/EC), 1998, Official Journal of European Communities, L331/1

Rev. #001 Active: 7/Dec/2006

MRSA Strips *(Cat. #24643)*

MRSA Strips are utilized in sensitivity testing for the identification of Methicillin Resistant *Staphylcoccus Aureus* (MRSA) bacteria.

Methicillin Resistant *Staphylcoccus Aureus* (MRSA) screening has become one of the most popular microbiological tests performed in clinical laboratories. One simple strip replaces a set of discs and allows screening to be carried out on dedicated sensitivity plates. Up to 6 organisms can be accommodated on one plate with the use of parallel streaks. Strips are 0.6 x 8cm long and contain 25mg of methicillin per strip.

Procedure

1. Inoculate a sensitivity agar plate with added 6.5% salt and a sensitivity agar plate without added salt, with a streak of the test organism sufficient to give a heavy growth. Repeat the process with up to 6 organisms per plate. Similarly inoculate a streak of the control sensitive and resistant *S. aureus.*

2. Place a MRSA Strip onto the plate at right angles to the inoculum streaks.

3. Incubate salt agar plates at 35°C and non-salt agar plates at 30°C overnight.

4. The plate is inspected and the inhibition of growth streaks are compared with the control sensitive and control resistant organisms. Growth of sensitive strains is significantly inhibited, zones of 15-25mm. Resistant strains show no, or only a small amount of inhibition, zones of 0-10mm.

MRSA Strip Reading and Interpretation

Strain	Distance across zone of inhibition	MIC mg/l
S. aureus NCTC 6571	20 mm	0.25
S. aureus ß-lactamase	15 mm	2
S. aureus	8 mm	8
S. aureus NCTC 11940	0 mm	128

Gram Negative Strips *(Cat. #24640)*

Gram Negative Strips are a rapid diagnostic test for aminopeptidase enzyme which is found in the cell wall of Gram-negative bacteria. These strips provide differentiation of Gram-positive and Gram-negative aerobes and facultative anaerobes.

Aminopeptidase is detected by using the chromogenic substrate L-aniline-4-nitroanilide (LANA). Each strip contains LANA (colorless) and the aminopeptidase hydrolyses LANA yielding bright yellow nitroaniline. Gram-positive organisms do not produce any color change. It has been shown to work in the presence of non-cultivable organisms allowing their Gram classification to be assigned.

Procedure

The strips can be used by first moistening the printed zones found on the strip with activating agent from the dropper bottle. Then using a wire or a plastic loop touch 2 or 3 colonies of the test organism on the agar medium. Smear the organism onto the test zone on the strip and a positive result is indicated within a minute by the smeared area turning bright yellow.

Strips maintain a 12 month shelf life.

Oxidase Strips *(Cat. #24637)*

Oxidase Strips are used in rapid strip tests for the identification of "Oxidase positive" organisms.

These strips detect cytochrome oxidase produced by bacteria such as *Pseudomonas, Neisseria* and *Campylobacter*. The test strip is infused with a colorless redox dye (tetramethyl-p-phenylenediamine dihydrochloride) and ascorbic acid. Oxidase positive bacteria rapidly convert the dye to indophenol blue (deep purple) in seconds. Ascorbic acid acts as a reducing agent to prevent auto-oxidation which occurs with traditional liquids. Oxidase Strips allow for simple and effortless oxidase detection without the daily requirement of preparing fresh reagent that is prone to oxidation.

Procedure

Using wire or plastic loop, touch 2 or 3 colonies of test organism on agar medium. Smear organism onto strip. Positive result is indicated within a few seconds by smeared area turning deep purple.

Strips maintain a 12 month shelf life.

Strep D Strips *(Cat. #24636)*

Use Strep D Strips as a rapid diagnostic test for Group D streptococci.

Results can be used to distinguish Lancefield Group D streptococcus from other streptococci. This test works by demonstrating an organism's ability to hydrolyse the glycoside aesculin in the presence of bile.

The strips contain aesculin, ferric citrate and bile salts. The aesculin is hydrolysed to aesculetin and glucose and the aesculetin reacts with the ferric citrate to from the visible dark brown or black complex which indicates a positive reaction.

Procedure

The strips are utilized by touching 2 or 3 colonies of the test organism found on an agar medium with a wire or plastic loop and smearing the organism onto a strip. The strips can then be incubated for up to 4 hours at 37°C. A positive result is indicated by the smeared area turning from a buff color to deep brown or black.

Strips maintain a shelf life of 12 months.

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Urease strips *(Cat. #24639)*

Urease Strips are a useful rapid diagnostic test for urease enzyme in *Helicobacter* or *Proteus*.

Urease is an enzyme that catalyzes the break-down of carbon-nitrogen bonds of amides to form carbon-dioxide, ammonia and water. Members of the genus Proteus are known to produce urease. However this test has also been shown to work very well with *Helicobacter* species which contain a very powerful urease. This test reveals the ability of these species to rapidly hydrolyze the substrate urea.

Each of the Urease Strips contains urea solution and the indicator phenol red. The ammonia released during the breakdown of urea causes the pH to rise, causing the phenol red to change color from yellow to pink-red. This reaction is seen more rapidly than is the case with urea broths or slopes. Urease Strips can be used to rapidly identify *Proteus* species cultured from urine samples, leg ulcer swabs, or ear swabs.

These species can be distinguished from other non-lactose fermenters such as *Salmonella, Shigella and Pseudomonas*.

Procedure

The strips are utilized by touching 2 or 3 colonies of the test organism found on an agar medium with a wire or plastic loop and smear onto a strip. The strips can then be incubated for up to 4 hours at 37°C. A positive result is indicated within 2 minutes by the smeared area turning from yellow to pink/red in color with a diffuse halo around the edge of the zone.

Strips maintain a shelf life of 12 months.

Ordering Information

Cat #	Description	Size
24642	Bacti Strips	1pkg(1000 strips)
24641	Beta Strips	1pkg (25 strips)
24638	E. Coli Strips	1pkg (25 strips)
24640	Gram Negative Strips	1pkg (25 strips)
24643	MRSA Strips	1pkg (50 strips)
24637	Oxidase Strips	1pkg (25 strips)
24636	Strep D Strips	1pkg (25 strips)
24639	Urease Strips	1pkg (25 strips)

To Order:

In The U.S. Call: 1-800-523-2575 • 215-343-6484

In The U.S. Fax: 1-800-343-3291 • 215-343-0214

In Germany Call: (49) 6221-765767

In Germany Fax: (49) 6221-764620

Order online anytime at www.polysciences.com

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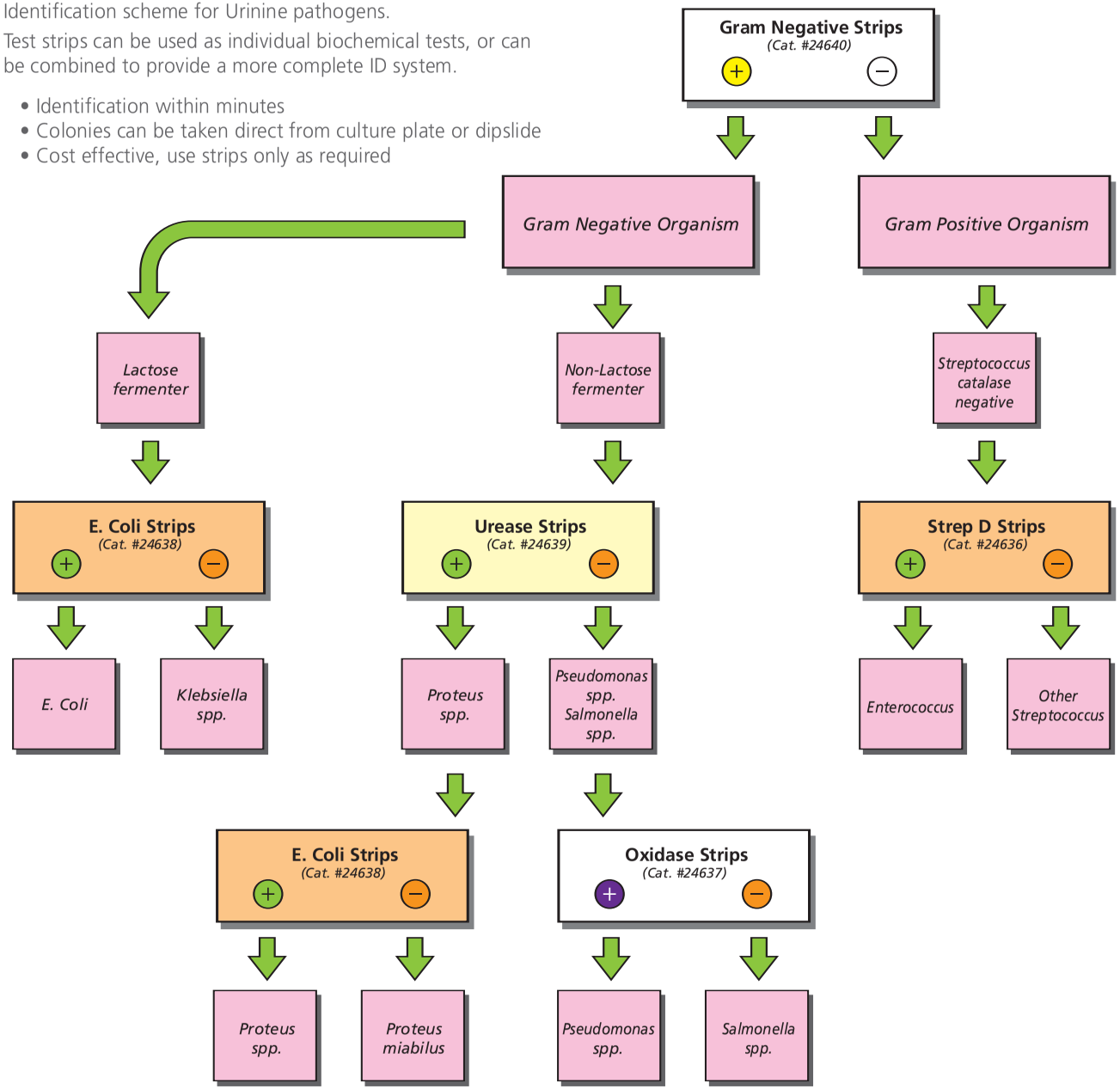
Rapid Bacterial Test Strip Identification System

Identification scheme for Urinine pathogens.

Test strips can be used as individual biochemical tests, or can be combined to provide a more complete ID system.

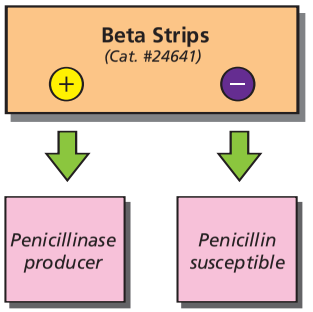
- Identification within minutes
- Colonies can be taken direct from culture plate or dipslide
- Cost effective, use strips only as required



Also available:

Beta Strips *Cat. #24641*

For detection of the presence of β-lactamase enzymes produced by strains of *Staphylococcus aureus, Neisseria gonorrhoeae, Branhamella catarrhalis* and *Haemophilus influenzae*.



Rapid Bacterial Test Strips from Polysciences, Inc.

Cat. #	Description	Quantity
24640	Gram Neg. Strips	25 strips
24638	E. Coli Strips	25 strips
24639	Urease Strips	25 strips
24636	Strep D Strips	25 strips
24637	Oxidase Strips	25 strips
24641	Beta Strips	25 strips

Also Available:

24642	Bacti Strips	1000 strips
24643	MRSA Strips	50 strips