One-Step PYR XeroStrips

(Catalog No. B5550)

One-Step PYR XeroStrips : Rapid test strips for the detection of qualitative pyrrolidonyl aminopeptidase/ pyrrolidonyl arylamidase (PYR) activity among streptococci and other microorganisms.

Intended Use

One- Step PYR Test, by **Biorex Labs**, is intended to assist in the identification of various streptococci[1] , gram positive cocci as well as members of the family *Enterobacteriaceae* [4]. The hydrolysis of PYR substrate by the enzyme pyrrolidonyl aminopeptidase is a characteristic of both enterococci and *S. pyogenes* but absent in other streptococci. Various studies have shown that over 95% of group A and group D streptococci hydrolyze PYR, however, all group D non-enterococci and a vast majority of viridians, and Group B Streptococci yield a negative result. In addition, PYR test is useful in differentiating among the members of the family *Enterbacteriaceae,* and various other gram positive cocci.

Principle

The chromogenic substrate, L-pyrrolidonyl-β-naphthylamide (PYR) is hydrolyzed by bacteria that exhibit the enzyme pyrrolidonyl aminopeptidase. β-naphthylamine is released during the hydrolysis and reacts with a proprietary indicator to produce a grayish blue color.

Reagents

Each One-Step PYR XeroStrip is a single-use test. The test substrate and the indicator are impregnated on a filter paper which is anchored onto a plastic strip support. The format is very convenient to handle and labeling**. The test area of the strip is buff-beige in color**.

Precautions and Warnings

Always follow the standard laboratory aseptic technique and safety protocol which includes wearing gloves, safety goggles, and a lab coat. Do not touch the reagent area (filter paper) of the XeroStrip. To minimize condensation, always acclimatize the container to room temperature before opening. Remove the desired number of strips and promptly close the container.

Storage

Store PYR XeroStrips in the original container with the desiccant between 2-8° C.

Materials needed but not provided

Disposable 0.01 ml plastic loop or wood sticks, distilled water and appropriate container to handle infectious waste are needed.

Procedure

The organism needed for the test should be in pure culture and sufficient in quantity to carry out the test. An 18-24 hour culture is recommended for optimal results. The culture should be grown on Tryptic Soy Blood agar or Chocolate agar. Media containing indicators and selective agents should not be used.

1. Use several colonies or a sweep of pure confluent growth and smear onto the test area. **If the colonies are wet enough and easy to smear, the test can be performed without adding water onto the XeroStrip**, however, up to 10 µl of distilled water (pH 6.8-7.0) may be used to wet the test area surface for the dry or granular colonies. Slight wetting may also enhance weaker reactions. Do not use a drop; instead use a 10 µl loop or a micropipette to wet the surface.
2. Incubate the XeroStrips at room temperature or, to enhance the reaction, may be incubated at 37° C for 1-5 minutes. Strong positive reactions are usually obvious within 30-60 seconds.

Results

The development of any **grayish-blue color** is a positive test and indicates pyrrolidonyl peptidase activity. A buff-beige color is regarded as negative.

Quality Control

Positive and negative controls should always be run in parallel with the test. A minimal quality control must include a positive and a negative organism. The following organisms are recommended for performing quality control:

Organism	Results
Enterococcus faecalis *ATCC 29212	Positive
Streptococcus pyogenes *ATCC 19615	Positive
Enterobacter aerogenes *ATCC 13048	Positive
Streptococcus agalactiae *ATCC 4768	Negative
Escherichia coli *ATCC 25922	Negative
Salmonella enteritidis *ATCC 13076	Negative

Availability

Product No. **B5550**: 50 One-Step PYR XeroStrips

Limitations

PYR test assists in presumptively identifying various organisms. Additional serological or biochemical tests are required for definitive identification. Do not add excessive amount of water onto the XeroStrips. A cooler incubation temperature is likely to yield a weaker reaction. For best results always use a 18-24 hour culture.

References:

1.Facklam RR, Thacker LG, Fox B, Eriquez L. Presumptive identification of streptococci with a new test system. *J. Clin Microbiol.* 1982; 15**:** 987-90

2. Patrick R. Murray, Ellen Jo Baron, James H. Jorgensen, Marie Louise Landry, Michael A.Pfaller, Manual of Clinical Microbiology, 9th ed.: American Society for Microbiology, 2007.

3. Nicola F, Centorbi H, Bantar C, Smayevsky J, Bianchini H Utility of pyrrolidonyl-arylamidase detection for typing *Enterobacteriaceae* and non-fermenting Gram-negative bacteria Rev Argent Microbiol. 1995 Oct-Dec;27(4):204-9

4. K. Inoue, K. Miki, K. Tamura, and R. Sakazaki; Evaluation of L-pyrrolidonyl peptidase paper strip test for differentiation of members of the *Enterobacteriaceae*, particularly Salmonella spp. J Clin Microbiol. 1996 July; 34(7): 1811–12.

Biorex Labs
5299 Transportation Blvd
Cleveland, Ohio 44125
440-824-3000
1-866-342-9976
Fax: 440-209-7776
www.biorexlabs.com