

PYR Reagent

Intended Use

For detection of pyroglutamate aminopeptidase activity in group A Streptococci and Enterococci.

Summary

Group A Streptococci and Enterococci can be differentiated from other Streptococci by their ability to produce an enzyme L-pyrroglutamyl-aminopeptidase. The PYR test uses L-pyrrolidonyl-b-naphthylamide (PYR) substrate to detect the presence of this enzyme L-pyrroglutamyl-aminopeptidase.

Principle

PYR is a rapid test to determine the ability of the organism to produce the enzyme L-pyrroglutamyl-aminopeptidase. Following incubation with a PYR substrate and addition of the PYR Reagent (cinnamaldehyde), a cherry red colour development indicates a positive test. The colour is formed when the PYR reagent combines with L-pyrrolidone and b-naphthylamine, hydrolysis products from the substrate, L-pyrrolidonyl-b-naphthylamide breakdown.

Reagents/contents

The Microxpress® PYR Reagent is a reagent set for laboratory use only.

The PYR Reagent comprises of:

1. 1% Cinnamaldehyde.

Storage and stability

1. Store the PYR Reagent at 15°C-25°C away from light.
2. Stability of the PYR Reagent is as per the expiry date mentioned on the label.

Procedure

Preparation of Inoculum

1. Isolate the organism to be identified on Nutrient Agar or Brain Heart Infusion Agar.
2. Pick up a single isolated colony and inoculate it in 4-5 mL Brain Heart Infusion Broth.
3. Incubate at 37°C for 6-8 hours until inoculum turbidity is between 0.1- 0.2 at 620 nm. Alternatively, a homogenous suspension made in 2-3 mL sterile saline adjusted to a turbidity of 0.1- 0.2 at 620 nm can also be used as inoculum.

Test procedure

1. Inoculate an aliquot (1 mL) of a suitable medium like brain heart infusion broth containing the substrate L-pyrrolidonyl-b-naphthylamide with the above-prepared inoculum (approx. 100 mL) and incubate for 6-8 hours at 35 - 37°C.
2. Observe for growth.
3. Add 1-2 drops of PYR Reagent to the tube.
4. Observe for colour change.

Appearance: Amber coloured clear solution.

Interpretation of results

1. Formation of cherry red colour indicates a positive reaction.
2. No colour change, or development of pink, yellow or orange colour indicates a negative reaction.

Quality control

Organisms (ATCC)

Enterococcus faecalis (29212)

Streptococcus pyogenes Strain Bruno (19615)

Lactobacillus plantarum (8014)

Reaction in PYR Test

+

+

-

Key:

+ = Cherry red

- = Yellow to orange colour

Precautions/limitations

1. The PYR Reagent is an in vitro diagnostic kit for laboratory and professional use only. Not for medicinal use.
2. The PYR Reagent cannot be used directly on clinical specimens. Only pure cultures should be used to obtain optimum results.
3. The organism to be identified has to be first isolated on a non-selective culture medium and then purified for use as an inoculum.
4. At times, the organism may give contradictory results because of mutation or media used for isolation, cultivation and maintenance. Results are prominent when fresh and enriched culture is used.
5. Ensure that the test organism is b-haemolytic, catalase negative and gram-positive coccus. Group D enterococci and Group A streptococci are both PYR positive, further differentiation based on morphological and biochemical tests needs to be done.
6. Clinical samples and microbial cultures should be considered as pathogenic biohazard and handled accordingly. Good laboratory practices and hazard precautions must be observed at all times.
7. The test is an aid to identification and is not a confirmatory test. Complete identification should include determination of gram reaction, morphology, and other biochemical and serological tests.
8. Do not use damaged or leaking kits. Avoid contact of reagents with skin and eyes.

Warranty

This product is designed to perform as described on the label and package insert. The manufacturer disclaims any implied warranty of use and sale for any other purpose.

References

1. Practical Medical Microbiology, Mackie & McCartney, 13th edition 1989, Edited by J. G. Collee, J. P. Duguid.
2. Diagnostic Microbiology, Bailey & Scott, 9th Edition, Mosby 1994.
3. Clarke P.H. And S.T. Cowan, Biochemical Methods For Bacteriology, J. Gen. Microbiol., 1952, Vol. 6: 187-197.
4. Presumptive Identification Of Streptococci With A New Test System, R.R. Facklam, L.G. Thacker, Et. Al., Journal Of Clinical Microbiology, June 1982, Vol. 15, No. 6, P: 987-990.
5. Preliminary Evaluation Of A Rapid Colorimetric Method For The Presumptive Identification Of Group A Streptococci And Enterococci, Paul D. Ellner, Darryl A. Williams, Et. Al., Journal Of Clinical Microbiology, Nov. 1985, Vol. 22, No. 5, P: 880-881.
6. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product	Pack Size
204160520010	PYR Reagent	10 mL

Disclaimer

Information provided is based on our inhouse technical data on file, it is recommended that user should validate at his end for suitable use of the product.
