


STANTON TERRITORIAL HEALTH AUTHORITY

Yellowknife, Northwest Territories

TITLE: PYR Test	Revision Date: 20-April-2018	Issue Date: 20-April-2016
Document Number: MIC51600	Status: Approved	
Distribution: Microbiology Test Manual	Page: 1 of 3	
Approved by: S. Asmussen, Manager of Diagnostic Services	Signed by: 	

PURPOSE:

L-pyrrolidonyl-p-naphthylamide (PYR) is the substrate for the detection of Pyrrolidonyl peptidase (PYRase). Hydrolysis of PYR by peptidase results in the production of β -naphthylamide which can be visualized as a **red** color upon the addition of the n, n-dimethyl-amino-cinnamaldehyde (color indicator). This is a useful tool in the identification of *Streptococcus pyogenes*, enterococci and *Staphylococcus lugdenensis*. It can also be used for separating PYR negative *E.coli* from other indole-positive, lactose-positive Gram negative rods.

SAMPLE INFORMATION:

Type	One well isolated colony
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REAGENTS and/or MEDIA:

Type	<ul style="list-style-type: none">• remel® disks impregnated with PYR (L-pyrrolidonyl-beta-naphthylamide)• remel® colour developer (0.01% p-dimethylamino-cinnamaldehyde)
Stability	This product should not be used if: <ol style="list-style-type: none">1. The colour of the disks has changed from white2. The expiration date has passed3. There are other signs of deterioration
Storage Requirements	Store refrigerated between 2-8° Celsius. Bring to room temperature before use.

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SUPPLIES:

- Glass slide
- Wooden stick
- Forceps

SPECIAL SAFETY PRECAUTIONS:

Containment Level 2 facilities, equipment, and operational practices for work involving infectious or potentially infectious materials or cultures.

- Lab gown must be worn when performing activities with potential pathogens.
- Gloves must be worn when direct skin contact with infected materials is unavoidable.
- Eye protection must be used where there is a known or potential risk of exposure to splashes.
- All procedures that may produce aerosols, or involve high concentrations or large volumes should be conducted in a biological safety cabinet (BSC).
- The use of needles, syringes, and other sharp objects should be strictly limited.

QUALITY CONTROL:

Performed once per day:

Positive Control: *Enterococcus faecalis* ATCC29212

Negative Control: *Streptococcus agalactiae* ATCC12386

- A TQC order is automatically generated to record the QC results

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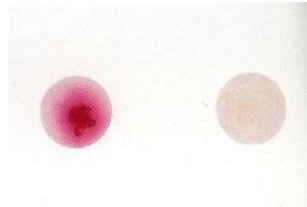
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PROCEDURE INSTRUCTIONS:

Step	Action
Performing a PYR Test	
2	Using forceps, remove PYR disk from vial and place on the surface of a blood agar plate. Alternately, place the disk on a clean slide and slightly moisten with sterile water.
3	With a wooden stick, pick 5-10 colonies and rub onto the PYR disk.
4	Allow to react for 2 minutes.
5	Add 1 drop of the color reagent and observe for color change. Observe for colour change within one minute.

INTERPRETATION OF RESULTS:

IF	THEN
Red color production	Positive
No color change	Negative



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LIMITATIONS:

- Some *Enterococci* do not possess detectable Group D antigen although they give a positive reaction in the PYR test. The identity of such organisms should be confirmed using the Vitek 2 instrument.
- If a catalase-negative, large colony beta-hemolytic isolate is PYR negative but tests positive with group A latex reagents, do not identify organism as *Streptococcus pyogenes*. Report as *Streptococcus* species and refer organism to DynaLIFE for further identification.
- False-negative reactions may occur if inadequate inoculum is used, or if inoculum is removed from a selective medium such as colistin-nalidixic acid (CNA) agar, or MacConkey agar.
- *Aerococcus viridans*, *Lactococcus garvieae*, certain staphylococci, and most *Corynebacterium haemolyticum* strains are PYR-positive, as are some *Enterobacteriaceae* and other Gram-negative bacilli.

REFERENCES:

- Clinical Microbiology Procedures Handbook, 4th edition, ASM Press, 2016
- Product insert: REMEL PYR Test Disk

REVISION HISTORY:

REVISION	DATE	Description of Change	REQUESTED BY
1.0	31Dec13	Initial Release.	Darrach (A)
2.0	31Mar16	Update of "Special Safety Precautions" to reflect risk assessment recommendations.	C. Russell
3.0	11Aug17	Update test to reflect negative results and <i>Streptococcus pyogenes</i> .	L. Steven

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