TITLE: KOH StringTest	Revision Date: 11-March-2016	Issue Date: 1-March-2014
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Approved by: C. Case, Manager of Diagnostic Services	Signed by: Cheryl Case	

PURPOSE:

A visible loopful of cells from a single, well-isolated colony is emulsified into a drop of 3% KOH. If the mixture becomes viscous and “strings” within 60 seconds of mixing (KOH-positive) then the colony is considered gram-negative. The reaction depends on the lysis of the gram-negative cell in the dilute alkali solution releasing cellular DNA to turn the suspension viscous. The formation of a string (DNA) in 3% KOH indicates that the isolate is a gram negative organism although it can be non-reactive while testing anaerobes.

REAGENTS and/or MEDIA:

- 40% KOH

SUPPLIES:

- 50mL conical tube
- Sterile blue loop
- Pipette
- Eppendorf

SPECIAL SAFETY PRECAUTIONS:

All patient specimens are assumed to be potentially infectious. Standard precautions must be followed. Since viable micro-organisms are present, all cultures must be handled with appropriate precautions. All equipment in contact with cultures should be decontaminated by appropriate methods.

QUALITY CONTROL:

Performed each time the test is performed:

- Positive control: *P.aeruginosa* ATCC2783
- Negative control: *S.aureus* ATCC25923

A QC order is generated in the TQC system: Resulting Worklist → MICS → 3STR

PROCEDURE INSTRUCTIONS:

Step	Action
Preparing the 3% KOH Solution	
1	Using the equation: **C1V1=C2V2** Calculate the amount of 40% KOH solution needed for a 3 mL solution with a final concentration of 3% (40)X=(3)(3) X=9/40 X=0.225mLs of KOH needed Water needed: 3mLs-0.225mLs=2.8mLs Using an Eppendorf pipettor set to 225µL – pipette 40% KOH into a conical tube
2	Add 2.8 mL of sterile water and mix

PROCEDURE INSTRUCTIONS:

Step	Action
Performing the String Test	
1	Label 3 slides as follows: 1. **TEST** 2. **POS Control** 3. **NEG Control**
2	Add 1 drop of 3% KOH to each slide
3	Emulsify a loopful of organism in the KOH
4	Stir for a maximum of 60 seconds and slowly lift the loop observing for string formation

EXPECTED RESULTS:

Positive	Formation of a string occurs 
Negative	No string formation occurs 

PRECAUTIONARY NOTES:

- False negatives can occur when using too light of an inoculums and/or testing anaerobes

- False positives can occur when testing mucoid organisms and using too heaving of an inoculum

REFERENCES:

- Mount Sinai Microbiology Manual. (n.d.). Retrieved October 23, 2013, from http://microbiology.mtsinai.on.ca/manual/tech/tech22.pdf

- Scott Sutton, P. (n.d.). *The Gram Stain*. Retrieved October 23, 2013, from The Microbiology Network: http://www.microbiol.org/resources/monographswhite-papers/the-gram-stain/

REVISION HISTORY:

REVISION	DATE	Description of Change	REQUESTED BY
1.0	31Dec2013	Initial Release	A.Darrach