STANTON TERRITORIAL HEALTH AUTHORITY

Yellowknife, Northwest Territories

TITLE: DNAse	Revision Date: 20-April-2018	Issue Date: 20-April-2016
Document Number: MIC50700	**Status: Approved**	
Distribution: Microbiology Test Manual	**Page:** 1 of 4	
Approved by: S. Asmussen, Manager of Diagnostic Services	**Signed by:** 	

PURPOSE:

This test determines the ability of an organism to produce deoxyribonuclease (DNAse). This test is used, in conjunction with others, for the identification of *S. aureus*, *M. catarrhalis* and *Serratia* species.

PRINCIPLE:

DNAses are enzymes that hydrolyze DNA and release free nucleotides and phosphate. Methyl green combines with highly polymerized DNA at pH 7.5 to produce a green colour complex in the agar. When the organism produces DNAse the DNA is hydrolyzed, and the methyl green fades resulting in a clearing of the agar around the colony.

SAMPLE INFORMATION:

Type	Well isolated colonies
Source	18-24 culture

REAGENTS and/or MEDIA:

Type	DNAse Agar with methyl green
Source	Oxoid Cat#MP0420
Stability	Stable until expiration date indicated on the package
Storage Requirements	Store at 2-8°C, away from direct light.
Criteria for rejection and follow up action	Media should not be used if there are signs of contamination or deterioration (shrinking, cracking or discolouration).

SUPPLIES:

- Sterile sticks, needles or inoculating loops
- DNAse agar plate

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:

Quality control is set up each time the test is performed with the following control organisms:

Positive:	*Staphylococcus aureus*	ATCC # 29213
Negative:	*Escherichia coli*	ATCC # 25922

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

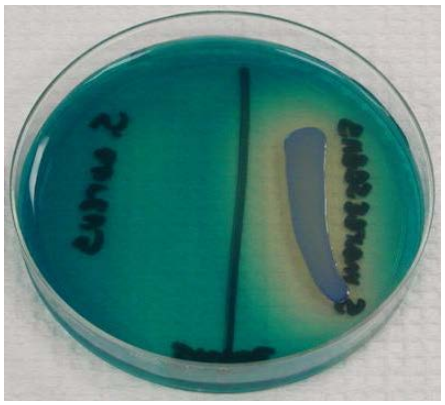
PROCEDURE INSTRUCTIONS:

Step	Action
Performing a DNAse Test	
1	After touching several colonies, inoculate a segment of the agar surface with a very visible, heaping amount of organism equivalent to an entire colony.
2	Use either circular or line method for inoculation. (Do not streak the entire plate, as it will be difficult to see the reaction.)
3	Incubate aerobically (without CO_2) at 35°C for 18 to 24 hours.
4	Examine the plate against a white background for colour change.

INTERPRETATION OF RESULTS:

Positive: A colourless zone around the inoculum

Negative: No colour change around the inoculum



NOTES AND PRECAUTIONS:

1. An inoculum that is too broad may result in complete decolourization of the media, due to the reduction of the dye. If this occurs, the test must be repeated.

REFERENCES:

- DNAse Media Technical Data Sheet, Dalynn Biologicals, Inc., 2003, Revised Feb 2006
- Clinical Microbiology Procedures Handbook, Henry D. Isenberg-Editor in Chief, 2004

REVISION HISTORY:

REVISION	DATE	Description of Change	REQUESTED BY
1.0	31-Dec-2013	Initial Release	A.Darrach
2.0	31-Mar-2016	Update of “Special Safety Precautions” to reflect risk assessment recommendations.	C. Russell