LABORATORY REPORT

Redcliffe labs

Patient NAME	**: Dummy**		
DOB/Age/Gender	:	Report STATUS	: Final Report
Patient ID / UHID	:	Barcode NO	:
Referred BY	:	Sample Type	: SPUTUM
Sample Collected	:	Report Date	:

Gram Stain

NATURE OF SPECIMEN	SPUTUM	
PUS CELLS	>25/LPF	-
EPITHELIAL CELLS	>25/LPF	-
YEAST	NIL	-
RBC	NIL	-
GRAM STAIN	NO ORGANISM SEEN.	-

Comment:

A Gram stain test is a laboratory technique used to differentiate bacterial species into two large groups based on the chemical and physical properties of their cell walls. The test was developed by Hans Christian Gram in 1884 and remains one of the most widely used and important diagnostic tools in microbiology.

Purpose of the Gram Stain Test

Classify Bacteria: It helps classify bacteria into two groups: Gram-positive and Gram-negative.
Aid in Diagnosis: It aids in the diagnosis of bacterial infections by determining the type of bacteria present in a sample.
Guide Treatment: It guides the choice of antibiotics, as Gram-positive and Gram-negative bacteria often respond to different types of antibiotics.

Interpretation

Gram-Positive Bacteria: Have thick peptidoglycan cell walls that retain the crystal violet stain and appear purple under a microscope. Examples include Staphylococcus and Streptococcus species.
Gram-Negative Bacteria: Have thin peptidoglycan cell walls and an outer membrane that does not retain the crystal violet stain, appearing pink or red after counterstaining. Examples include Escherichia coli and Salmonella species.

Applications

Clinical Diagnosis: Identifying the cause of infections such as pneumonia, meningitis, and urinary tract infections.
Microbiological Research: Studying bacterial structure and taxonomy.
Antibiotic Sensitivity Testing: Informing the selection of appropriate antibiotics based on the type of bacteria.

Limitations

Non-Specific: Some bacteria do not respond predictably to Gram staining, such as Mycobacterium species, which require acid-fast staining.
Mixed Infections: Mixed infections with both Gram-positive and Gram-negative bacteria can complicate interpretation.
Sample Quality: The accuracy depends on the quality and handling of the sample.The Gram stain test is a quick, cost-effective, and essential tool in clinical microbiology for the initial characterization of bacterial pathogens.

***** End Of Report *****

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