BacterLab Division

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BacterStain™
Carbon Fuchsin

MICROBIOLOGICAL STAIN
BacterStain™ Carbon Fuchsin

The dye is used in the acid-fast staining method.

Code: 04004

1. INTENDED USE

BacterStrain™ Carbon Fuchsin is a mixture of phenol and basic fuchsin that is used in bacterial staining procedures. It is commonly used in the staining of mycobacteria because it has an affinity for the mycolic acids found in their cell membranes.

2. PRINCIPLES

BacterStrain™ Carbon Fuchsin is a component of the Ziehl Neelsen stain kit. Carbon fuchsin is used as the primary stain dye to detect acid-fast bacteria because it is more soluble in the cells wall lipids than in the acid alcohol. If the bacteria is acid-fast the bacteria will retain the initial red color of the dye because they are able to resist the destaining by acid alcohol (0.4–1% HCl in 70% EtOH). Additionally, it can be used for the staining of bacterial spores.

Carbon fuchsin is also used as a topical antiseptic and antifungal.

3. TYPICAL COMPOSITION

For 1 liter of strain:

Fuchsin	3 g
Ethanol	100 mL
Phenol Crystal	45 g

4. PREPARATION

The stain are ready-to-use, no preparation required.

5. INSTRUCTIONS FOR USE

Used in the Ziehl Neelsen staining kit

- Slide Preparation:
  - Prepare a clean, scratch-free slide, immerse it in 95% ethanol, dry it, then heat over a flame.
  - Label the slide and mark the smear position on the underside of the slide.
  - Collect the clinical specimen (such as sputum, fluid, tissue) or colony from culture, centrifuge to collect the sediment.
  - Use a sterile inoculating loop to take one loopful (3mm in diameter) or place one drop of the specimen onto the slideAllow it to air dry and fix by gentle heat
- Fixing the Slide: Allow the slide to air dry naturally in a biosafety cabinet or dry it at 60°C.
- Staining:
  - Flood slide with **BacterStain™ Carbon Fuchsin** (Code: 04004) and heat 2 – 3 times until steam rises (Do NOT allow stain to boil or to dry on the slide), let it cool naturally for 5 minutes.
  - Wash with water
  - Apply several changes of **BacterStain™ Alcohol acid** (Code: 04009) until no more colour seems to come from the preparation

- Rinse with water and counterstain with **BacterStain™ Methylene blue** (Code: 04006) for approximately 1 – 2 minutes.
- Decolorize using acid alcohol solution, rinse thoroughly.
- Stain with Methylene blue solution for 1 – 2 minutes, rinse well.

– Rinse with water, drain until dry.
– Examine under the microscope, using the oil immersion lens

6. RESULTS

– Mycobacteria: Red/ pink color.
– Other background fields: Blue color.
– AFB Morphology from the specimen: AFB appears as thin, slightly curved rods, staining red, either isolated or clustered together, easily visible against the blue background.

7. QUALITY CONTROL

BacterLab ensures the quality of each product batch by testing with ATCC reference strains.

Reference strains	Conditions	Expected results
Positive specimen	oil immersion lens (100x)	AFB stains red on a light blue background, with no staining residue visible
Negative specimen		no AFB is observed

8. STORAGE AND TRANSPORT CONDITIONS

– Storage: 18 – 25°C.
– Transportation: Ambient temperature.

9. PACKAGING

– Packaging: 100mL/ bottle or according to the customer's request..

10. SHELF LIFE

– Expiration Date: 24 months from the manufacturing date.