

Spore Staining Solution (Scharffer-Fulton Method)

Cat #: A-CSH391

Size: 2x50mL

Storage: Room temperature (12 months)

Product Description

The presence, shape, and location of bacterial spores are important characteristics of bacteria. The spore wall of bacteria is more complex, dense, and less permeable than the cell wall of vegetative cells, making it difficult to stain and decolorize compared to vegetative cells. Spores have strong resistance to heat and chemicals. When using alkaline dyes and heating or prolonging the staining time, both the bacterial body and the spores can be stained. After rinsing with distilled water, the color of the bacterial body is removed, but the color of the spores remains, allowing for clear differentiation of the morphology between spores and vegetative cells under a microscope.

The spore staining solution (Scharffer-Fulton method) consists mainly of malachite green staining solution and spore counterstain solution. Therefore, this method is also known as the malachite green method. Spores are stained green, while vegetative cells appear red. This method is sensitive, easy to perform, and provides reliable results. However, it should be noted that spores should be observed during their mature stage, but not for too long, as otherwise only spores will be visible while the vegetative cells have already disappeared. This staining solution is for research use only and is not intended for clinical diagnosis or treatment.

Usage

1. Place a clean, oil-free glass slide and add a drop of distilled water.
2. Using an inoculating loop, pick up a small amount of *Bacillus cereus* from the slant culture and mix it with the distilled water.
3. Prepare a smear and allow it to air dry.
4. Add malachite green staining solution to the smear, ensuring even distribution of bacteria.

5. Heat the staining area gently for 10 minutes.
6. Rinse gently with water.
7. Stain with the spore counterstain solution for 1 minute, then rinse with water.
8. Microscopic examination: After drying, observe the shape and size of the spores, their position within the bacterial body, and whether they cause the bacterial body to swell.

Notes

1. The glass slide should be clean and free of oil stains.
2. Precipitation may occur in the malachite green staining solution, which is a normal phenomenon. If excessive precipitation occurs, it should be filtered.
3. Spores form during the growth and development stage. Spores should be observed during their mature stage, but not for too long, as otherwise only spores will be visible while the vegetative cells have already disappeared.
4. Handle the staining process with care to prevent the bacteria from falling off.
5. Avoid using a high-temperature flame for fixation.
6. When adding malachite green staining solution, avoid allowing the smear to dry out.
7. For your safety and health, please wear a lab coat and disposable gloves while performing the operation.

Disclaimer

The reagent is only used in the field of scientific research, not suitable for clinical diagnosis or other purposes.