04551 Schaeffer and Fulton Spore Stain Kit
(Spore Stain Kit according to Schaeffer and Fulton)

In Schaeffer-Fulton`s method, a primary stain-malachite green is forced into the spore by steaming the bacterial emulsion. Malachite green is water soluble and has a low affinity for cellular material, so vegetative cells may be decolourized with water. Vegetative cells are then counterstained with safranin.

Composition:
Schaeffer & Fulton`s Spore Stain A (Cat. No. 90903):
Malachite green 50 g/l in water,
Schaeffer & Fulton`s Spore Stain B (Cat. No. 39955):
Safranin O 5 g/l in water

Storage:
Store at room temperature. Expiration date is stated on label.

Directions:
1. Prepare a smear of the culture on a slide. Air dry it and fix it with gentle heat.
2. Flood the entire slide, with Schaeffer & Fulton`s Spore Stain A solution (malachite green).
3. Steam for 3-6 minutes, and rinse under running tap water.
4. Counterstain with Schaeffer & Fulton`s Spore Stain B solution (safranin) for 30 seconds.
5. Wash with water, dry and observe under oil immersion lens.

Principle:
The form of a spore is characteristic to the bacterium and allows it to survive in drastic environmental conditions. Spores have a tough outer covering made of the protein keratin and are resistant to heat and chemicals. The keratin also resists staining, so extreme measures must be taken to stain the spore. In the Schaeffer-Fulton`s method, a primary stain-malachite green is forced into the spore by steaming the bacterial emulsion. Malachite green is water soluble and has a low affinity for cellular material, so vegetative cells may be decolourized with water. Vegetative cells are then counterstained with safranin.
Spores may be located in the middle of the cell, at the end of the cell, or between the end and middle of the cell. Spore shape may also be of diagnostic use. Spores may be spherical or elliptical.
Members of the genus Corneybacterium may exhibit club-shaped swellings that might be confused with spores. Spore staining distinguishes between true spores and these structures.

Interpretation of results:

Spores:	green colored spherules.
Vegetative cells:	red colored.

References:

1. A.B. Schaeffer, M. Fulton, A simplified method of staining endospores. Science 77, 194 (1993)
2. Bacteriological Analytical Manual 8th ed., Revision A (1998)
3. H.J. Conn's Biological Stains, 9th ed. by R.D. Lillie (1977)

Precautions and Disclaimer
This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.