

Kit Gram-Nicolle

Staining Kit for the Differentiation of Gram-Positive from Gram-Negative Bacteria



Principle:

Gram-Nicolle is a differential staining procedure that uses the wall structure of bacteria to distinguish the Gram-positive bacteria from the Gram-negative bacteria. It consists of:

- The formation in alcohol of an insoluble complex between Carbolic Gentian Violet, Lugol Solution and Gram-positive bacteria. The colour of the bacteria is not changed by alcohol and remains stained violet.
- The wall of Gram-negative bacteria is more permeable to alcohol. This permeability causes the Carbolic Gentian Violet-Lugol Solution complex to dissolve. The colour of Gram-negative bacteria is changed by alcohol, is fixed by Ziehl Carbolic Fuchsin and is stained pink.

Staining Procedure:

Length of test: 3 minutes

- Fix the smear with a low heat (or cold with 95°-alcohol)

Allow the preparation to cool

- Stain with **Carbolic Gentian Violet** (Bottle 1): 1 to 5 minutes
- Wash thoroughly with tap water to get rid of excess solution 1
- Rinse with a jet of **Lugol, PVP-Stabilized Solution** (Bottle 2) to get rid of any trace of water, then cover with solution 2: 30 seconds to 1 minute
- Quickly rinse with water
- Bleach with **Fast Differentiator** (Bottle 3), then rinse with water
- Stain with **Ziehl Carbolic Fuchsin 1/10** (Bottle 4): 1 minute
- Wash the smear with water, dry, then examine under a x100-immersion-objective microscope.

Use:

For professional use only

In vitro use only

The collection and processing of chemical and biological waste must be conducted by specialised and registered companies.

Bibliography:

CLARK G., *Staining Procedure*, Williams & Wilkins, 4th ed., 1981, p. 377-379.

LANGERON M., *Précis de microscopie*, Masson & Cie, 6^{ème} éd., 1942, p. 553-556.

RICHARD C, *Gram et la collaboration de Gram*, Ass. Anc. El. Inst. Pasteur, vol. 33, n°129, 1991, p. 15-19.

Ordering:

Kit Gram Nicolle

Code 364320-0000

1 kit (4 x 240 ml)

Edited: 26/08/2004
Updated: 27/05/04



Kit Gram-Nicolle

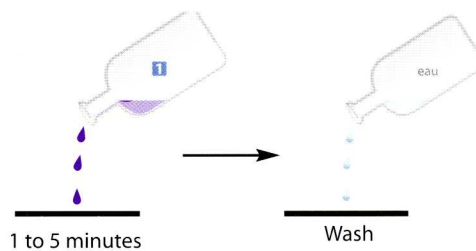
Staining Kit for the Differentiation of Gram-Positive from Gram-Negative Bacteria

Kit Components:

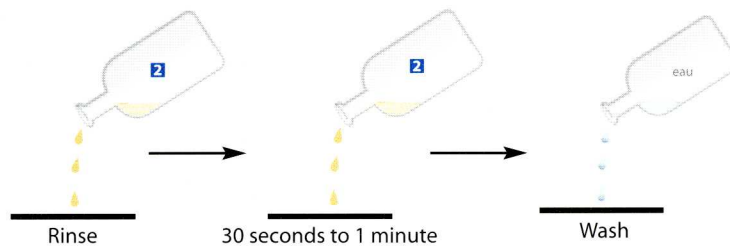
Number of tests possible:	230 to 300 slides
Storage temperature:	15-25°C
Bottle 1: Carbolic Gentian Violet	l x 240 ml
Bottle 2: Lugol, PVP-Stabilized Solution	l x 240 ml
Bottle 3: Fast Differentiator	l x 240 ml
Bottle 4: Ziehl Carbolic Fuchsin 1/10	l x 240 ml

Staining Procedure:

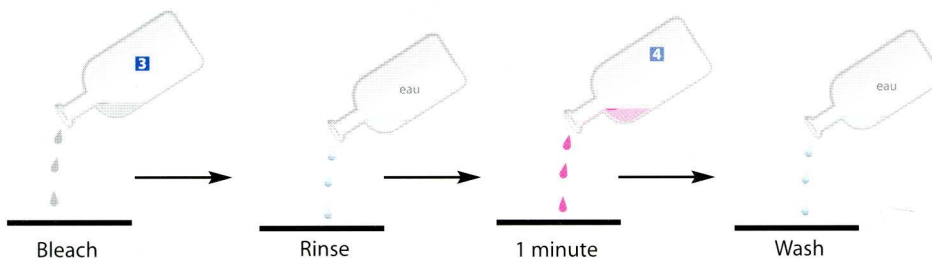
STEP 1: Stain with Carbolic Gentian Violet and wash thoroughly with tap water



STEP 2: Rinse and cover with Lugol, PVP-Stabilized Solution



STEP 3 & 4: Bleach with Fast Differentiator and cover with Ziehl Carbolic Fuchsin 1/10



Results:

Gram-positive bacteria:

violet

Gram-negative bacteria:

pink