

## Neisseria PET

Biochemical identification for *Neisseria gonorrhoeae* and *Neisseria meningitidis*.

Neisseria PET uses chromogenic substrates to detect the presence of preformed enzymes in fresh cultures of Neisseria. The test can be used to confirm *Neisseria meningitidis* and *lactamica* and presumptively identify *Neisseria gonorrhoeae*, within 35 minutes.



- **SIMPLE**  
One tube to inoculate, one reagent addition
- **RAPID**  
Results in 35 minutes
- **EASY TO READ**  
Distinct colour changes for major pathogens
- **ECONOMICAL**  
Significantly less expensive than multi-tube systems
- **RELIABLE**  
Customer evaluation shows 100% correlation with antigen detection

**CK3025**  
25 Tests

“ Neisseria PET has proven to be an excellent system for the rapid biochemical identification of *Neisseria gonorrhoeae* and fits in well with our routine procedure for providing an improved diagnostic service”

## Performance Characteristics

	PET	Antigen Test
No of isolates investigated	105	105
No of isolates identified as <i>Neisseria gonorrhoeae</i>	94	94
No of isolates identified as <i>Neisseria meningitidis</i> / antigen test negative	11	11

## Principle

*Neisseria* PET contains three non-interfering substrates; gamma-glutamyl nitroanalide, bromo-chloro-indol-B-D galactopyranoside and proline naphthylamide. These substrates are bound to chromogens, coloured end products are released when the substrates are hydrolysed.

- ***Neisseria lactamica*** produces beta galactosidase, which hydrolyses bromo-chloro-indol-B-D galactopyranoside to produce a **blue-coloured end-product** before the addition of PEP reagent.
- ***Neisseria meningitidis*** produces gamma-glutamylaminopeptidase, which hydrolyses gamma-glutamyl nitroanalide to produce a **yellow coloured end product** before the addition of PEP reagent.
- ***Neisseria gonorrhoeae*** produces hydroxyprolineaminopeptidase, which hydrolyses proline naphthylamide, the free naphthylamide produces a **red/orange colour** on addition of the PEP reagent.
- ***Neisseria meningitidis*** will produce a **purple colour** on addition of the PEP reagent.

## General Background

Because of the serious social and medico-legal consequences of misdiagnosing gonorrhoeae, great care must be taken in the identification of *Neisseria gonorrhoeae*.

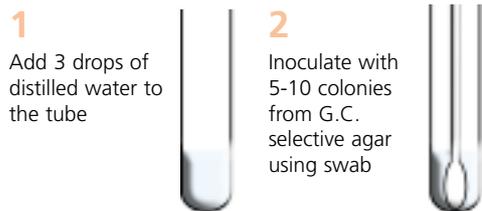
No single technique has proved infallible in the identification of *Neisseria gonorrhoeae*:

The classic 'acid detection from carbohydrates' or 'sugars' can give false identification due to the existence of 'Glucose only' strains of *Neisseria meningitidis*, *N. denitrificans*, *N. kochii* and *N. elongata*.

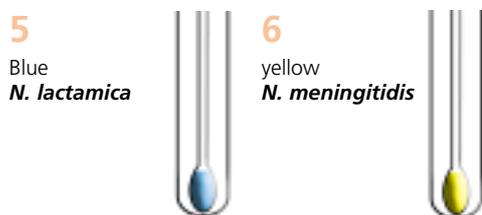
Preformed enzyme tests often include proline aminopeptidase as a marker for *Neisseria gonorrhoeae*, but proline aminopeptidase negative strains have been reported and non-pathogenic *Neisseria* can be proline aminopeptidase positive, although these organisms should not grow through on GC selective agars.

Both classic sugars and preformed enzyme tests are dependent on the purity of the inoculum. A contaminated inoculum will lead to incorrect results.

Antigen detection tests are dependent on the exposure of the antigen site and the completeness of the antigen pool used to raise the antibodies although they are less dependent on the purity and viability of the inoculum.

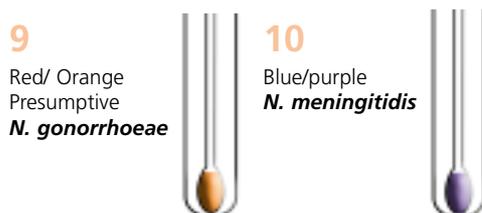


- 3 Incubate for 30 minutes
- 4 Observe colour changes



- 7 If colourless >

- 8 Add 1 drop PEP reagent. Observe colour changes up to 2 minutes



- 11 If colourless >

- 12 Perform Tributyrin test, If positive – ***Moraxella catarrhalis***

Whilst the use of a single test method and clinical findings may be considered sufficient for a presumptive identification we would advise the use of two test methods involving different principles (e.g. biochemical, antigenic or molecular) before issuing a definitive/confirmed identification of *Neisseria gonorrhoeae*.

This advice is given on the CDC website: [www.cdc.gov/ncidod/dastlr/gcdir/neident/ngon](http://www.cdc.gov/ncidod/dastlr/gcdir/neident/ngon)