

**Alere**™



# Fungal Molecular Dx

# Fungal MDx

The time & place for MDx in mycology

# Platelia Aspergillus Galactomannan (GM) ELISA assay (Bio-Rad)

GM is a cell wall component of *Aspergillus*, released at the tips of the hyphae during the growth of the fungus

The assay recognises the **galactofuranose side chains** of this GM molecule

The assay can potentially react with any family of molecules which have:

$\beta$ -1,5-galactofuranose chain = antigen

This antigen is not limited to the *Aspergillus*  
Galactomannan molecule!

# Platelia Aspergillus Galactomannan (GM) ELISA assay (Bio-Rad)

- Widely used and available for detection of GM in serum
- Meta Analysis conducted (2006) overall GM has mean:
  - Sensitivity of 71%
  - Specificity of 89% .....

## However...

- Variable acceptance in scientific community
  - Sensitivity varies widely between 29% - 100% depending on **patient population**
    - WHY?.....
  - Is GM the most appropriate test for all patient populations??

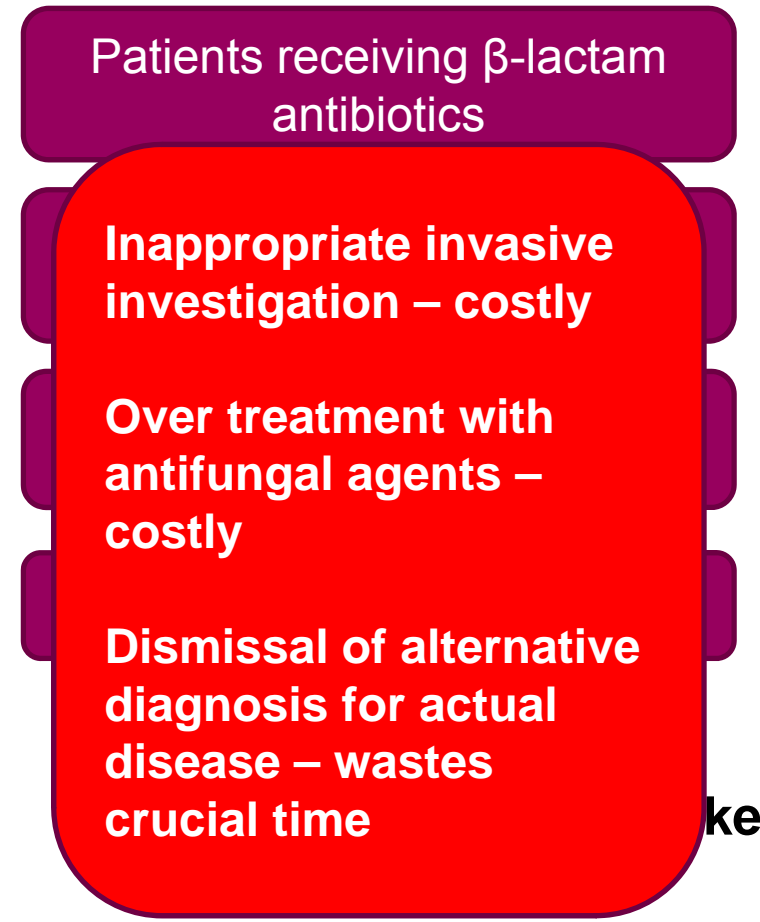
## Reduced GM sensitivity

## Reduced GM specificity

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**False Negatives**

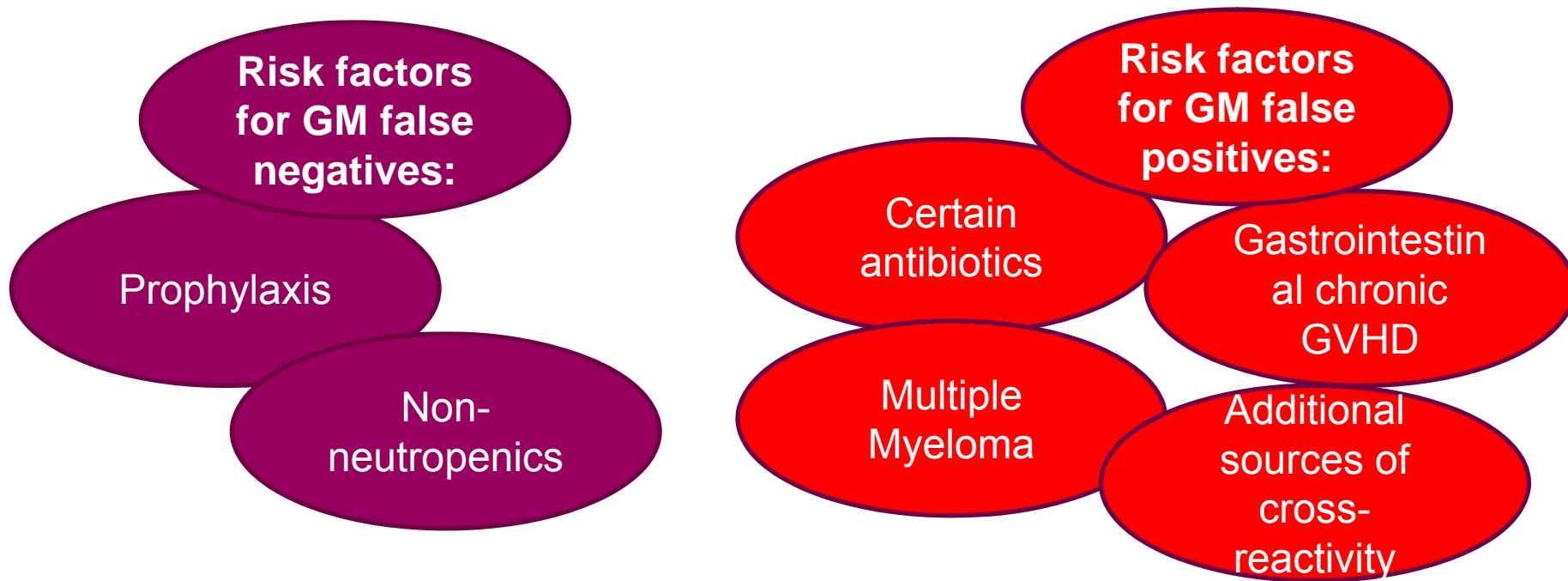


**False Positives**

Neutropenia – abnormally low levels of neutrophils which are primary immune defence against infection

# GM assay is used to monitor high risk patients:

- Haemopoietic Stem Cell Transplant patients (IA leading cause of death)
- Acute Myeloid Leukaemia
- Within ANY patient group, need to be aware of what **risk factors** your patient population has which may cause false negatives or false positives:



# The Message

- Value of GM limited to = regular monitoring of **neutropenic** patients who **do not** receive mould-active antifungal drugs
- PCR provides more definitive information in:
  - Diagnosis, especially in
    - **Non-neutropenics** and
    - **Neutropenics on prophylaxis**
  - Screening – no false positives due to cross-reactivity:-  
Can be successfully used with:

β-lactam  
antibiotics

Neonates

Gastrointes  
. GVHD

Multiple  
Myeloma

Intravenous  
solutions



## MycXtra®

Effective extraction of fungal DNA  
from clinical respiratory samples.

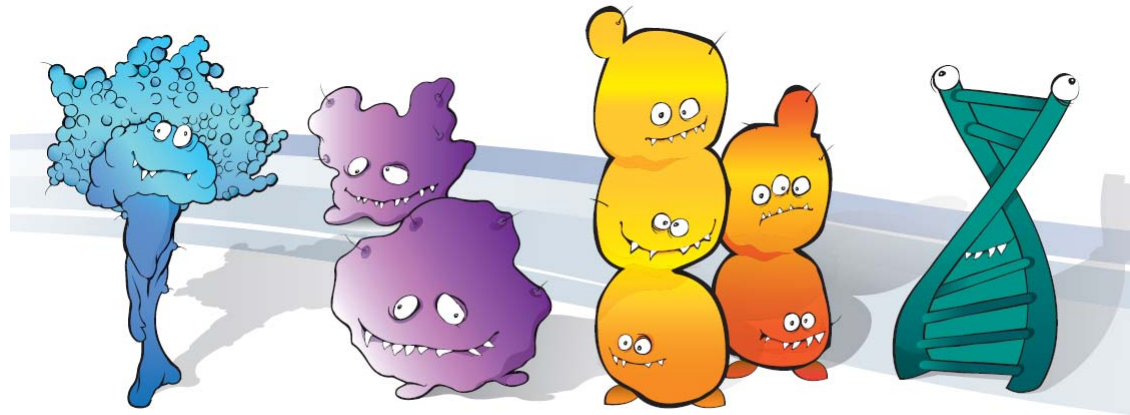


The **MycXtra®** fungal DNA Extraction Kit isolates and purifies fungal DNA from BAL and sputum samples for subsequent PCR analyses.

**FREE of contaminants** Using standard PCR analysis, the kit has been proven to be free from detectable fungal contamination. This ensures that any fungal DNA detected during molecular testing is reliably of patient origin.

# Myconostica

## The experts in fungal diagnostics



### MycAssay™

#### Aspergillus

Rapid detection of *Aspergillus* spp. DNA from respiratory and serum samples using real-time PCR.

### MycAssay™

#### Pneumocystis

Rapid detection of *Pneumocystis* DNA from lower respiratory tract using real-time PCR.

### MycAssay™

#### Candida

Rapid detection of *Candida* spp. This test will be available in 2011.

**Coming soon**

### MycXtra®

#### DNA extraction

Effective extraction of fungal DNA from respiratory samples.