

Galactomannan

Galactomannan (GM) is another fungal cell wall component particularly found in *Aspergillus* species. Therefore, it is often called the “*Aspergillus* galactomannan test”. However, it is also present in the cell wall of other filamentous fungi (Figure 5.)

Galactomannan		
GM Positive	Aspergillus	Cross reactivity: <i>Fusarium</i> , <i>Acremonium</i> , <i>Histoplasma</i> , <i>Alternaria</i> , <i>Penicillium</i> . False positive: translocation from the gut (cereal, pasta). Environmental contamination during laboratory processing.
GM usually negative	Mucorales	
GM Negative	Candida, Cryptococcus, Pneumocystis	

Figure 5. Galactomannan test

In invasive aspergillosis GM can be detected in serum and if the lungs are the primary focus also in BAL fluid. As GM is released by actively growing hyphae the BAL fluid is a useful sample to assess active infection in cases where *Aspergillus* has been cultured from respiratory samples. Dormant *Aspergillus* spores can colonise the lungs and may in itself not be indicative of infection. This means in high risk patients such as those with haematological malignancies and neutropaenia or critical care patients who have suggestive CT imaging of the lungs (nodules, consolidation, cavitation etc) or those who have a severe respiratory virus infections (influenza, COVID) it is useful to obtain a BAL for GM testing. The cut off level for *Aspergillus* GM index is however different in BAL (>1) and serum (>0.5).

Screening of regular serum GM during prolonged neutropaenia is particularly useful in haematology patients as it helps to diagnose and treat patients with invasive aspergillosis early. As GM is quickly taken up by neutrophils the GM test in non-neutropaenic patients can give false negative results and respiratory samples are a more appropriate sample type if IPA is suspected. Similarly to BDG the GM can be false-positive in some cases (Figure 5.)

Due to the complexity of the patients at risk for fungal infections, the interpretation of the results usually requires specialist input.

