



CLINICAL DIAGNOSIS

Does Cross-Reactivity Occur in the Fungal Antigen Assays?

Complete cross-reactivity occurs in the *Histoplasma* and *Blastomyces* galactomannan antigen assays in specimens from patients with histoplasmosis or blastomycosis (table). The antigen detected in these infections is identical. There is no need to order both. The two assays use different standard curves accounting for different concentrations, typically 2-4 ng higher in the *Histoplasma* assay than the *Blastomyces* assay. For example, the concentration may be 6.5 ng/mL in the *Histoplasma* assay and 4.2 ng/mL in the *Blastomyces* assay.

Lesser cross-reactivity occurs between these galactomannan antigens and coccidioidomycosis antigen, which is a different class of galactomannan. In this case the antigen concentration helps distinguish a true-positive result from a cross reaction. For example, in coccidioidomycosis cases the *Coccidioides* antigen may be 4.2 ng/mL while the *Histoplasma* cross reaction is 0.4 ng/mL.

Even less cross-reactivity occurs between the galactomannan antigens detected in histoplasmosis, blastomycosis, or coccidioidomycosis and the *Aspergillus* galactomannan, and the true positive result is higher than the cross reaction.

No cross reaction occurs between the galactoxylomannan detected in cryptococcosis and the galactomannans detected in histoplasmosis and blastomycosis, but studies of cross-reactivity in cryptococcosis and coccidioidomycosis have not been conducted. Weakly positive cross reactions (0.5-1.5 units) may occur in the *Aspergillus* galactomannan assay in serum from patients with cryptococcosis with concentrations of *cryptococcal* antigen >1: 512. High levels of *Aspergillus* galactomannan (>7units) in patients with aspergillosis do not cross react in the *cryptococcal* galactoxylomannan assay. Cross-reactivity patterns have not been reported with non-*Aspergillus* molds and algae.

| Mycosis | Antigen Assay Cross-Reactivity | | | | |
|---------------------------|--------------------------------|---------------|--------------------|----------------|---------------|
| | Histoplasmosis | Blastomycosis | Coccidioidomycosis | Cryptococcosis | Aspergillosis |
| Histoplasmosis | NA | Complete | Moderate | None | Slight |
| Blastomycosis | Complete | NA | Moderate | None | Slight |
| Coccidioidomycosis | Moderate | Moderate | NA | Unknown | Unknown |
| Cryptococcosis | None | None | Unknown | NA | Slight |
| Aspergillosis | Slight | Slight | Unknown | None | NA |

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