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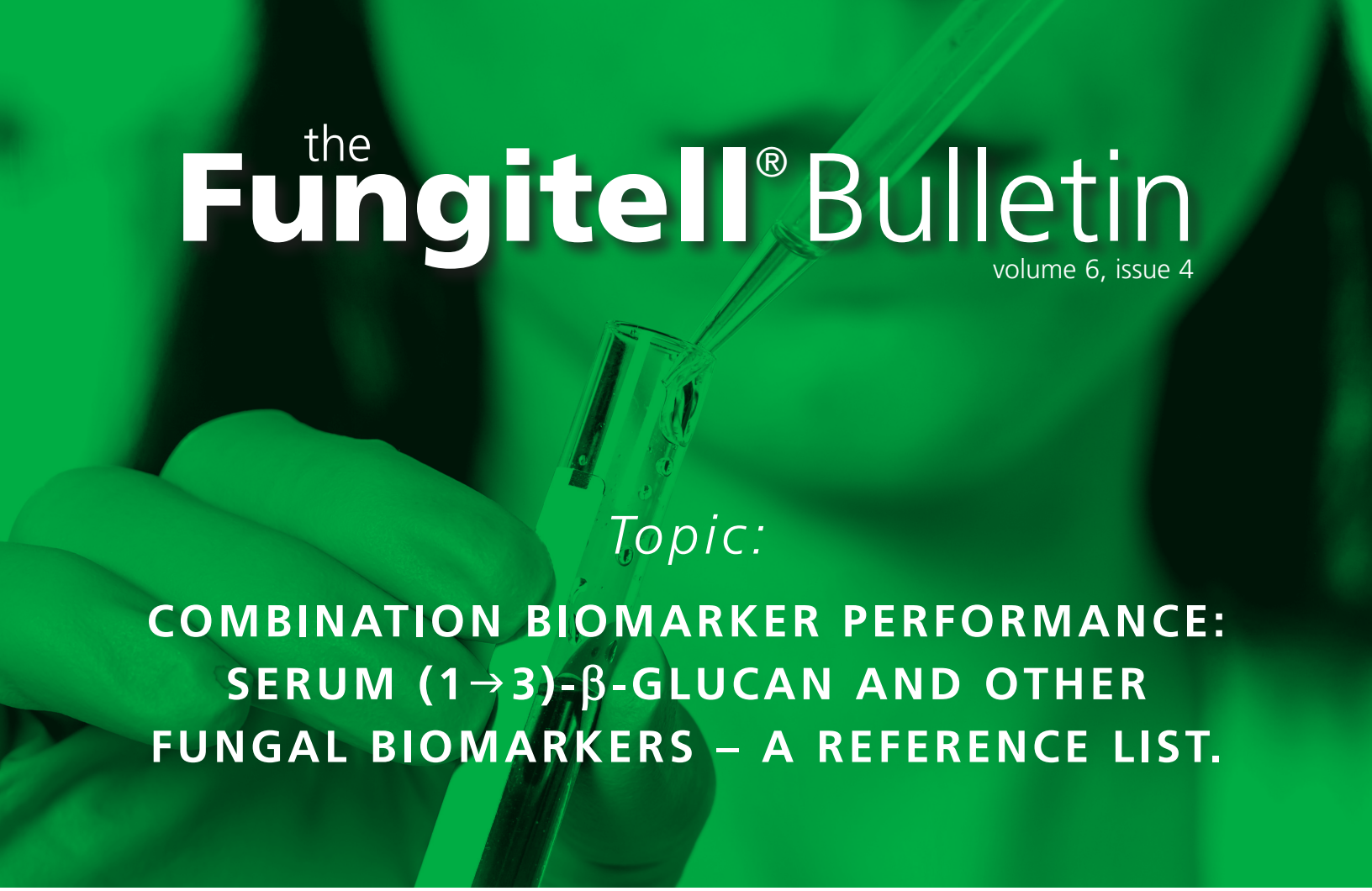

Topic:

COMBINATION BIOMARKER PERFORMANCE: SERUM (1→3)-β-GLUCAN AND OTHER FUNGAL BIOMARKERS – A REFERENCE LIST.

Discussion:

Serum (1→3)-β-glucan (BG) has been demonstrated to have high diagnostic utility for invasive fungal disease. This includes excellent negative predictive value (NPV), permitting much improved antifungal stewardship. In recent years, clinical investigators have pushed beyond single marker-based diagnostic studies to evaluate BG in conjunction with other tests for fungi-specific markers. This approach has the potential to combine BG, a near pan-fungal test, with genus-specific bio-markers to yield enhanced diagnostic performance that includes improved specificity and genus information. This approach presents the opportunity to more effectively guide clinical management. The diagnostic performance of combinations of BG and other fungal biomarkers has been evaluated in a growing number of studies over the last 10 years. These have included PCR[1,2,3,4,5,6,11,13,16,17,23,24,27,28], Mannan[5,7,9,10,14,16,23,26,29], Anti-Mannan[5,7,14,16,23], Candida Anti-Germ Tube Antibody (CAGTA)[5,7], Galactomannan antigen ELISA[2,3,4,6,11,15,17,19,20,21,22,25,27], *Aspergillus* antigen Lateral Flow Devices (LFD)[11], Candida Score[18], Colonization Index[18], KL6[8], LDH[8,12], S-Adenosyl Methionine (SAME)[8], procalcitonin[30], and radiology[8]. In virtually all of these studies, the diagnostic performance of combination testing has been shown to be enhanced. These observations suggest the use of BG-based diagnostic algorithms that include reflex testing to genus-specific tests when the BG result is positive. The combination biomarker studies referenced above are appended in the below-listed table.

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(1→3)-β-D-Glucan Assay

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