Antibodies against *Candida albicans* Antigens

The diploid, unicellular yeast *Candida albicans* is an important commensal pathogen that colonizes the skin and mucosal surfaces of 30-70% of all humans (Dühring *et al*. 2015). In healthy individuals, *C. albicans* is controlled by the normal microbial flora, epithelial barriers, and the immune system. In situations when this homeostasis becomes imbalanced, e.g. burns leading to the destruction of epithelial barriers or a compromised immune system, a *C. albicans* infection, candidiasis, can develop (Gow and Hube 2012; Dühring *et al*. 2015). Superficial infections of the oral and vaginal mucosa are the most common forms of candidiasises. It is estimated that approximately 75% of all women suffer from vulvovaginal candidiasis at least once in their lifetime and up to 50% from recurrent infections. Especially in immunocompromised individuals, *C. albicans* can cause systemic infections by entering the blood stream (candidemia) and disseminating further through the body to infect virtually any organ. Mortality rates of up to 50% have been reported for these systemic infections (Sudbery 2011; Dühring *et al*. 2015).

Glucan 1,3-beta-glycosidase (Bgl2) is a cell wall localized 1,3-beta-gylcosyltransferase, whose deletion negatively affects *C. albicans* virulence (Hartland *et al*. 1991; Sarthy *et al*. 1997). In 2006, Pitarch *et al*. analyzed sera from patients diagnosed with systemic candidiasis and found all to be positive for anti-Bgl2 antibodies.

C. albicans enolase is a glycolytic enzyme that catalyzes the conversion of 2-phosphoglycerate to phosphoenolpyruvate and is localized in both the cytoplasm and the cell wall (Angiolella *et al*. 1996). Depending on the study, antibodies against this protein have been reported in approximately 50-90% of patients (Mitsutake *et al*. 1994; van Deventer *et al*. 1994; Lain *et al*. 2007).

The heat shock protein 70 (Hsp70) family comprises molecular chaperones involved in the synthesis and transport of proteins. In *C. albicans*, the cytoplasmic Hsp70 or SSA1 also localizes to the cell wall and functions in the adhesion to host cells. Further, it reacts with patient sera in immunoassays (La Valle *et al*. 1995; López-Ribot *et al*. 1996; Bromuro *et al*. 1998; Chaffin *et al*. 1998).

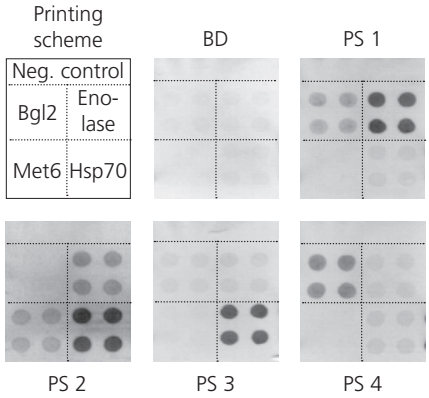

Figure: Immunodot analyses of sera from a blood donor (BD) and of patients infected with Candida albicans (PS 1-4) for the presence of antibodies against recombinant C. albicans Bgl2, Enolase, Hsp70, and Met6. The proteins were printed on nitrocellulose membranes as indicated.

C. albicans methionine synthase (Met6) is an essential, cobalamin-independent enzyme involved in the synthesis of methionine (Jones *et al*. 2004; Suliman *et al*. 2007) and has been reported as a major antigen in patients suffering from systemic candidiasis (Pardo *et al*. 2000; Pitarch *et al*. 2006).

DIARECT's *Candida albicans* Bgl2, Enolase, Hsp70, and Met6 are produced in the baculovirus/insect cell expression system.

Ordering Information		
44800	*Candida albicans* Bgl2	0.1 mg
44801		1.0 mg
45300	*Candida albicans* Enolase	0.1 mg
45301		1.0 mg
45400	*Candida albicans* Hsp70	0.1 mg
45401		1.0 mg
44900	*Candida albicans* Met6	0.1 mg
44901		1.0 mg

References:
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Sarthy *et al*. (1997) Microbiology. 143:367-376
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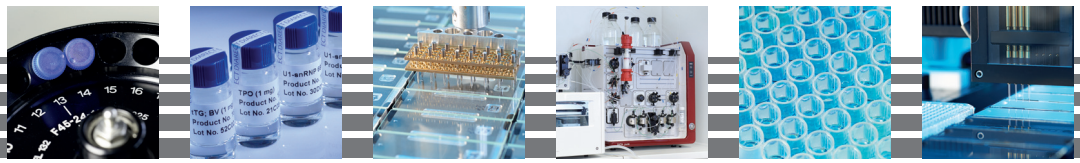

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