

## Beta( $\beta$ )-D-Glucan Assay

Beta( $\beta$ )-D-Glucan assay (BDG) is offered at Immuno-pathology laboratory at the Cleveland Clinic main campus.

This is a protease zymogen-based colorimetric assay (FUNGITELL® ASSAY) based on a modification of the *Limulus* Amebocyte Lysate (LAL) pathway in which BDG, where present in the sample, binds Factor G.

Activated Factor G turns a proclotting enzyme to clotting enzyme. The latter cleaves an artificial chromogenic substrate (a short peptide) to generate color. The reaction is done at 37°C and kinetically read by a spectrophotometer to generate a standard curve and samples readouts that are subsequently converted to BDG concentrations in pg/ml.

The assay is used as an aid in diagnosing certain systemic fungal infections such as Candidemia, and in prognostication and monitoring response to anti-fungal therapy in hospitalized patients.

This test is only available to inpatients at CCF hospitals and cannot be accepted more than twice a week per patient. It is important to note that certain fungi, such as the genus *Cryptococcus* which produces very low levels of BDG, may not result in serum BDG levels sufficiently elevated so as to be detected by the assay. Infections with fungi of the order *Mucorales* such as *Absidia*, *Mucor* and *Rhizopus* which are not known to produce BDG, can also yield non-detectable serum BDG levels.

In addition, the yeast phase of *Blastomyces dermatitidis* produces little BDG and may not be detected by the assay. Furthermore, positive BDG results have been seen in hemodialysis patients, those who received certain fractionated blood products (such as albumin, IVIg), and those exposed to glucan-containing gauze or surgical sponges.

### Test Overview

<b>Test Name</b>	(1,3) B-D Glucan
<b>Ordering Mnemonic</b>	BDGLCN
<b>Methodology</b>	Protease zymogen-based colorimetric assay (FUNGITELL® ASSAY)
<b>Specimen Requirements</b>	0.5 mL Serum
<b>Stability</b>	Unacceptable (Ambient), 7 days (Refrigerated), and 1 year (Frozen)
<b>Reference Range</b>	Negative; <60 pg/ml
<b>Reportable Range</b>	31 to 500 pg/ml
<b>CPT Code</b>	87449
<b>Days Performed</b>	Monday, Wednesday, Friday

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