

Reference Laboratory for Echinocandin Resistance

The Pfizer-supported Reference Laboratory for Echinocandin Resistance in the laboratory of Dr. David Perlin (New Jersey, USA) was established in 2006 to independently assess reduced antifungal susceptibility to echinocandin drugs in yeast and mould clinical isolates referred from clinical microbiology laboratories and to determine the principal mechanisms for reduced susceptibility. All clinical isolates are characterized for phenotypic, genotypic and molecular properties and are banked for future studies. The Reference Center has characterized several hundred isolates, which has contributed to a greater understanding of clinical resistance due to microbial reduced susceptibility. The principal mechanism responsible for clinical resistance is modification and/or changes in the level of the drug target glucan synthase, which is encoded by FKS genes (1). These studies have helped define a better understanding of MIC breakpoints for susceptibility (2). The FKS consensus resistance mechanism has been observed in *C. albicans*, *C. glabrata*, *C. krusei*, *C. tropicalis* (1) and *A. fumigatus* (4). The molecular characterization service is free to users. Please contact Dr. David Perlin (Email: perlinds@umdnj.edu) for more details.

References

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- (2) Garcia-Effron, G., Park, S. and Perlin, D.S. 2009. Correlating echinocandin MIC and kinetic inhibition of fks1 mutant glucan synthases for *Candida albicans*: implications for interpretive breakpoints. Antimicrob Agents Chemother. 53(1):112-22.
- (3) Garcia-Effron G, Lee S, Park S, Cleary JD, Perlin DS. 2009. Effect of *Candida glabrata* FKS1 and FKS2 mutations on echinocandin sensitivity and kinetics of 1,3- β -D-glucan synthase: implication for the existing susceptibility breakpoint. Antimicrob Agents Chemother. 53(9):3690-9
- (4) Arendrup MC, Garcia-Effron G, Buzina W, Mortensen KL, Reiter N, Lundin C, Jensen HE, Lass-Flörl C, Perlin DS, Bruun B. 2009. Breakthrough *Aspergillus fumigatus* and *Candida albicans* double infection during caspofungin treatment: laboratory characteristics and implication for susceptibility testing. Antimicrob Agents Chemother. 53(3):1185-93.