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## Comparative Evaluation of Micronaut-AM and CLSI broth micro-dilution method for antifungal susceptibility testing of *Aspergillus* species against four commonly used antifungals

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### Abstract

The aim of this study was to evaluate a colorimetric method, Micronaut-AM, for determining susceptibility testing of anidulafungin, amphotericin, voriconazole and itraconazole by comparing the Minimum Inhibitory (Effective) Concentrations (MICs/MECs) obtained by this method to those generated by the reference Clinical Laboratory Standard Investigation (CLSI) method. 78 clinical isolates of *Aspergillus species*, nine of them azole-resistant, were tested against above antifungals. *A fumigatus* ATCC 204305 was used as a reference strain and test was performed in accordance with slightly modified yeast susceptibility testing instruction of the manufacture; conidia suspension inoculum and alamarBlue concentration were optimised. These same isolates were referred to Bristol Mycology reference laboratory and tested by CLSI method.

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Micronaut-AM (MN) showed significant concordance ( $P < 0.0001$ ) with CLSI method and overall agreement was high ( $\geq 90\%$ ). In addition, Micronaut-AM produced echinocandin MECs results within 18-24h incubation time and reliably detected azole resistant isolates. Essential agreement (within 2 log<sub>2</sub> dilution of median) between MN and CLSI reference laboratory method was 99 % for anidulafungin, 100 % for amphotericin; 90% for voriconazole and 87 % for itraconazole. Categorical agreement for anidulafungin, amphotericin B, voriconazole and itraconazole were 100%, 96%, 97% and 99% respectively.

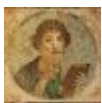
Micronaut-AM showed very good agreement with the reference broth micro-dilution method results for all antifungal agents tested and was able to detect azole resistance. This colorimetric method is very promising and appears to be a suitable alternative susceptibility testing method to labour intensive broth microdilution method for *Aspergillus species*.

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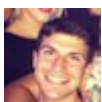
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