Molecular Detection of *C. auris*: A Comparative Evaluation of Commercial Assays including a new selective *C. auris* media for Clinical Laboratory Use

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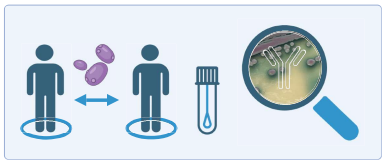
ESCMID Global 2026 TOP RATED ABSTRACT

INTRODUCTION

Candidozyma auris (C. auris) is a multidrug-resistant fungal pathogen causing severe invasive infections with high transmission risk in healthcare settings.

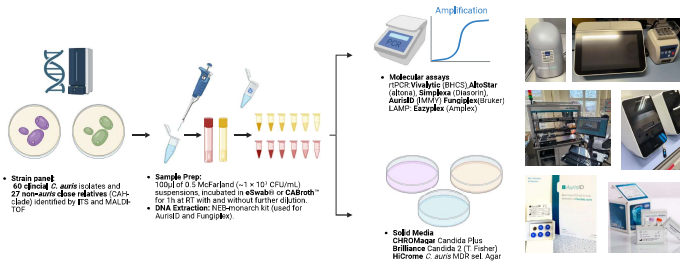


Rapid, accurate detection is critical for outbreak control.

This study **evaluates** the **performance of six commercial molecular assays** (5 rtPCR, 1 LAMP), **three solid media** and compares **two liquid media** eSwab® and a novel selective broth, CABroth™ for clinical laboratory use.

METHODS

60 clinical *C. auris* isolates, 27 non-auris CAH-clade isolates were used to evaluate all methodes of detection.



RESULTS

(1) Validation of 60 clinical *C. auris* strains and 27 close relatives (CAH clade)

rtPCR assays (fig 1). Sensitivity: 100% for all assays (60/60 *C. auris* detected), Turnaround Time: 30 min – 6 h, Throughput: 1–90 samples per run, Mean CT Values (95%CI): Simplexa: 20,48 (20,00–20.95); AurisID: 23,83 (23,36–24,3), Vivalytic: 30,49 (29,72–31,27), Fungiplex: 28,88 (28,25–29,52), AltoStar: 26,53 (26,05–27,02)

LAMP assay (fig 2). Median TTP: 9.43 min (8.80–9.97); Quickest assay! 6 false positives among CAH-clade, Specificity: 77,7% Adjusted cut-off (15 min dotted line) improved specificity to 96.3% as 1x *C. duobushaemuli* remained positive.

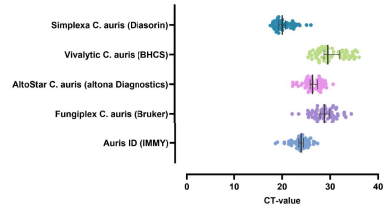


Figure 1: Performance of 5 qPCR assays vs. 60 clinical *C. auris* iisolates (Clade I-V)

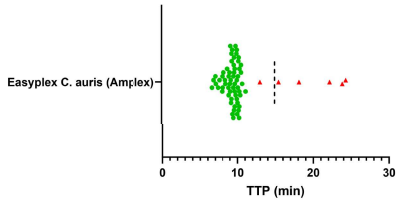


Figure 2: LAMP against 60 clinical *C. auris* isolates (Clade I-V, green dots) and 6 false positives CAH-clade isol. (red tri.)

(2) Dilution series of 5 *C. auris* strains (Clade I-V) and LOD

Molecular assays (fig 3).
All rtPCR assays identify *C. auris* at low concentrations. AltoStar *C. auris* shows the best performance. LAMP has the lowest sensitivity. Simplexa is inhibitory with CABroth™, otherwise both media perform equally.

Selective media (fig 4).
Most tested selective media detect *C. auris* in low concentrations. However, , HIChrome showes a limited detection rate.
CAbroth™ harbours the highest yield, even at very low concentrations, but also the longest time of incubation.

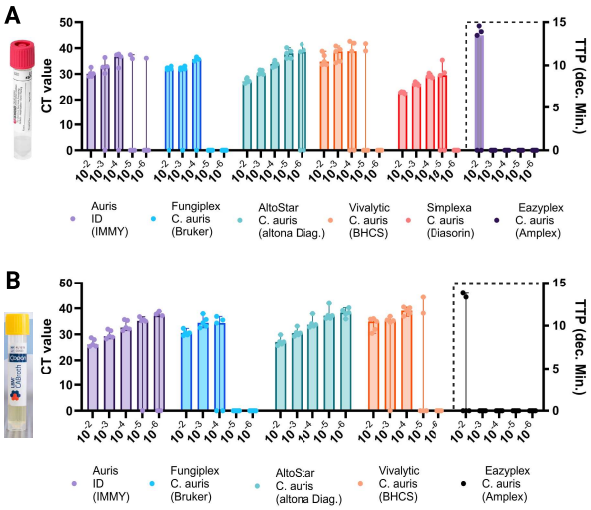


Figure 3: Performance of molecular assays. Dilution series of 5 *C. auris* strains (Clade I-V, McF 0.5) in **A)** eSwab® and **B)** CABroth™. The new selective broth (CABroth™ (Copan Italia, Brescia)) that was included as a comparison to eSwab® media shows similar performance.

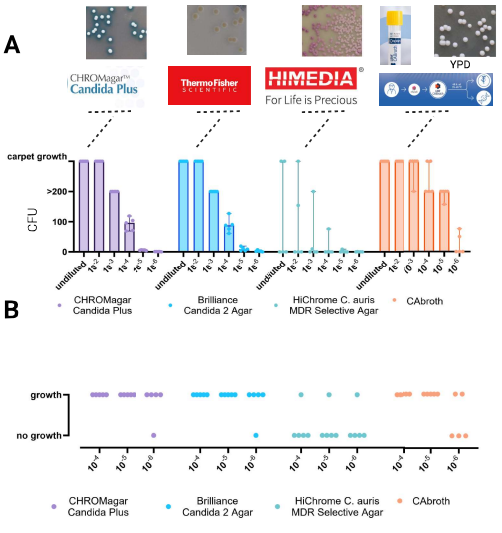
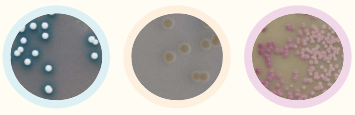


Figure 4: A) Performance of solid and liquid selective media. Dilution series of representive 5 *C. auris* strains (Clade I-V, from McF 0.5). **B)** Discrimination and activity of growth at higher dilution levels.

(3) Performance of solid selective media vs. 60 clinical *C. auris* strains and 27 close relatives (CAH clade)

CHROMagar and Brilliance show equal sensitivity, while HiCrome seems to be to selective for a non-MDR setting (no growth of relevant clinical strains)



Chromogenic medium	Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
CHROMagar Candida Plus	0,95 (0,86-0,99)	0,93 (0,76-0,99)	0,97 (0,88-1,00)	0,89 (0,72-0,98)
Th. Fisher Brilliance Candida 2	0,95 (0,86-0,99)	1,00 (0,90-1,00)	1,00 (0,94-1,00)	0,90 (0,73-0,98)
HiCrome C. auris MDR Selective	0,63 (0,50-0,75)	1,00 (0,91-1,00)	1,00 (0,87-1,00)	0,55 (0,40-0,69)

CONCLUSION

Rapid *C. auris* detection is elemental for outbreak and infection control. Overall the assays show medium to excellent performance. However, cultural methods harbour at least equal sensitivity compared to molecular tests. Patient samples are currently evaluated to further validate our findings.

ACKNOWLEDGEMENTS

We are thankful to all companies involved.
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