



ISWAVLD 2023

International Symposium of the World
Association of Veterinary Laboratory
Diagnosticians

29 JUNE-1 JULY
2023
Congress Centre
Lyon

Towards
the veterinary
diagnostics
of the
future

Main topic : One Health

Added value of CHROMID®CPS Elite and WASPLab® for the detection of Veterinary Uro-pathogen

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Background

Urine is one of the most common sample in veterinary laboratories with a negative rate between 40% to 65%. Within positive urines, E.coli represents 40% to 70% of uro-pathogen. Others pathogens recovered are Streptococcus spp, Staphylococcus spp, Klebsiella spp, Proteae. Automated incubation and imaging of urine cultures with WASPLab® are already performed in clinical microbiology laboratories by using CHROMID®CPS Elite enabling a reliable identification of the pathogen and its antimicrobial susceptibility testing with a full traceability.

Methods

A first study was conducted with 112 clinical strains including 51 E.coli, 23 KESC group (Klebsiella spp, Enterobacter spp, Citrobacter spp, Serratia spp), 19 Enterococcus species and 19 PMP (Proteus spp, Morganella spp, Providencia spp). The strains were inoculated at 2 concentrations onto CHROMID®CPS Elite (CPSE) and incubated into the WASPLab for 12h and 18h in aerobic atmosphere.

An additional set of 26 veterinary strains including 9 Staphylococcus spp, 5 Aerococcus spp, 5 Pasteurella spp, 3 Prevotella spp, 2 Streptococcus uberis, 1 Yersinia kristensenii and 1 Brucella anthropi were inoculated in parallel onto CPSE and MCK/CNA and incubated into the WASPLab® in the same conditions.

Results

Two hundred and seventeen (217) results were analyzed for CPSE for the first study and 26 for CPSE and MCK/CNA for the additional data set at 12h and 18h of incubation.

The fertility of CPSE was respectively at 12h and 18h, 98.2% to 99.1% for the first data set. For the additional data set: 65.4% to 76.9% for CPSE and 53.8% to 61.5% for MCK/CNA.

Removing species with specific atmosphere requirement (Prevotella spp) the fertility of CPSE reached 87% at 18h (remaining false negative concerned 2 strains of P.canis and 1 strain of A.viridans)

The recovery rate for E.coli, KESC, Enterococcus and PMP was respectively 83.8%, 87.5%, 92.1%, and 89,5% at 12h to 88.1% and 100% at 18h.

Conclusions

This study demonstrated that the use of CHROMID®CPS Elite for the isolation and identification of veterinary uro-pathogens brings a real added value in comparison to standard non chromogenic media with reduced unnecessary confirmatory test, preventing Proteus species swarming and easy detection of mixed culture thanks to chromogenic substrates.

The combination with WASPLab® reduces handling time, brings full traceability, and improves recovery of fastidious Gram-positive organisms