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ePoster Viewing

Diagnostic/laboratory methods other than molecular

Validation of Copan new FecalSwab device for the preservation of clinical specimens for the detection of enteric pathogens

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Objectives: Collection, preservation and transportation of stool or rectal swab specimens are important for accurate laboratory diagnosis of pathogens causing gastrointestinal infections. Copan is always improving the Liquid Based Microbiology (LBM) devices used with the Walk Away Specimens Processor (WASP). The FecalSwab device (a flocced swab and a tube with 2 ml of semi-liquid medium), has now been improved in order to be in compliance with the new CLSI M40-A2 standards. Moreover a fill line has been inserted on the label to indicate the maximum amount of sample to add. The objective of this study was evaluate Copan FecalSwab (FS) against Copan Cary-Blair Agar Gel transystem (CBT) to support the viability of enteric pathogens using ATCC strains according to the current CLSI M40-A2 standards.

Methods: ATCC strains of *S. typhimurium* 14028, *S. sonnei* 9290, *Y. enterocolitica* 9610, *E.coli* 25922, *E. faecalis* 29212, *C. jejuni* 33291, *V. parahaemolyticus* 17802, *C. difficile* 9689, *C. utilis* 9950, *E. faecium* (VRE) 700221, *E. faecalis* (VRE)51299, *E. gallinarum* 700425, *E.coli* O157-H7 (700728) were used used for this validation study. Bacteria suspension for each strains were prepared starting from a 0.5 McF, diluted tenfold in physiological saline to provide working suspensions of approximately 1.5×10^4 CFU/mL, 1.5×10^3 CFU/mL and 1.5×10^2 CFU/mL. Both FS and CBT were inoculated with the appropriate volume of inoculum in order to obtain a valid time 0 colony count (25-250 CFU/plate) with the above concentrations. All testing was performed in triplicate, three devices for zero-time viability determination and three devices for each subsequent incubation/storage time 6, 24, 48 hours at RT, and 6, 24, 48, 72 hours at 4°C. At each interval, all dilutions for both devices were plated by direct swabbing on TSA+5% sheep blood agar plates and incubated under optimum conditions according to the organism tested. Colonies were counted and recorded.

Results: All the bacteria strains were recovered from both transport systems at each storage time, except for *C.difficile* that was only recovered after 6 hours. The FS, in overall, was able to maintain better bacteria stability levels compared to the CBT, and was in compliance with the current CLSI M40-A2 standards.

Conclusions: From the results obtained, the Copan FecalSwab as collection, preservation and transportation device, proved to be more efficient to maintain the viability and the levels of the enteric pathogens compared to the Cary-Blair Agar Gel transystem. Further studies with clinical fecal specimens are in progress.