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Evaluation of Crayfish Chaff Charcoal Agar as a transport medium for Anaerobes

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Abstract

A laboratory formulated crayfish chaff charcoal agar (CCCA) was evaluated both as transport and storage medium for anaerobic bacteria in parallel with Amies charcoal agar (ACA), cooked meat medium (CMM) and thioglycollate broth (TCB). The survival of anaerobes in swab obtained clinical specimens and viability of specific anaerobes in these media were assessed. Eight genera of anaerobes (*Bacteroides*, *Fusobacterium*, *Parvobacteroides*, *Porphyromonas*, *Prevotella*, *Clostridium*, *Peptoniphilus*, *Peptostreptococcus*) were isolated from ACA, CMM and CCCA, 7 (*Bacteroides*, *Fusobacterium*, *Parvobacteroides*, *Prevotella*, *Clostridium*, *Peptoniphilus*, *Peptostreptococcus*) from TCB transported specimens. Comparatively, the difference in isolation rate of anaerobes in aspirate (85 %) and swab (75 %) processed specimens was not significant ($p < 0.05$). Irrespective of storage temperature (-20^0 C or 30 ± 2^0 C), positive anaerobic cultures from 7-day stored swab specimens in transport media were TCB 10, CCCA 14, ACA and CMM 18 each. Anaerobes recovery from CCCA and ACA were comparable ($p < 0.05$). Quantitatively, *Bacteroides* was recovered after 6 weeks of storage in CCCA with counts of $10^{6.1}$ and $10^{5.6}$ CFU/ml at -20^0 C and 30 ± 2^0 C respectively. Similar pattern of recovery occurred with *Prevotella*, *Clostridium* and *Peptoniphilus* in CCCA, ACA and other transport media with no significant differences in viable counts ($p < 0.05$). The CCCA function is comparable with those of the other media and can be prepared and used in-house for transport of clinical specimens and short term storage of anaerobes.

Biography

Prof. L. O. Egwari is a professor of Medical Microbiology at Covenant University with specialization in anaerobic bacteria in human infections. He is the director of Research and Development in Covenant University and has published many papers in reputable journals. He is a member of Anaerobes Society of the Americas.