Correspondence

Neomycin blood agar as a selective medium for vancomycin resistant Enterococcus faecium

We read with interest the article by Chadwick and Oppenheim1 regarding the selective isolation of Enterococcus faecium and agree that further comparative studies of screening media are required for detection of vancomycin resistant enterococci (VRE) from clinical and environmental sources. Furthermore, we believe that an overall strategy for the isolation of these increasingly prevalent nosocomial pathogens should be developed.

Using cephalexin aztreonam arabinose agar (CAA),2 a medium developed for the selective isolation of E faecium, in association with a broth enrichment technique, we examined 92 swabs from 70 environmental sites and 22 rectal swabs during the investigation of a nosocomial outbreak on a renal unit. All swabs were plated directly onto CAA, and CAA containing 4 mg/l vancomycin (Eli Lilly). The swab was then placed into cephalexin aztreonam (CA) broth prepared by the addition of cephalexin and aztreonam to one litre of sterile brain heart infusion broth (Unipath). Plates were examined for E faecium, following 24 and 48 hours' incubation at 37°C in air. CA broth was subcultured onto both of the above media following enrichment for 24 hours.

Thirty eight E faecium strains were isolated from the environmental and patient samples. Of these, 28 (74%) were vancomycin sensitive and 10 (26%) were vancomycin resistant. When the isolation of E faecium from direct culture and broth enrichment was compared, 16 strains (42%) were isolated on direct culture, and the remaining 22 strains (58%) were isolated from broth enrichment only. Of the 10 vancomycin resistant strains, only two (20%) were isolated on direct plating. It was interesting to note that vancomycin resistant strains often required 48 hours' incubation to produce typical colonies. This delayed growth was presumably because of the time required for the induction of the Van B resistance phenotype in the broth enrichment cultures.

Our investigations show that the isolation rate of E faecium during nosocomial outbreaks may be seriously underestimated if a broth enrichment procedure is not used, as only 16 (42%) of the 38 E faecium strains were isolated on direct culture. Moreover, only 20% of strains of VRE were isolated on direct culture. It is likely that the additional strains detected after broth enrichment were present in low numbers, which was easily lost from samples if the broth enrichment step was not used, regardless of the type of selective media used. This effect might, however, be compounded if a selective medium inhibitory to VRE3 was used without an enrichment stage.

In order to implement a successful infection control strategy it is essential that accurate information is available about the numbers of cases of clinical infection or colonisation, and the extent of any environmental contamination with VRE. Our study suggests that outbreak management based on results of screening exercises using only direct culture techniques is inappropriate.

We agree with Chadwick and Oppenheim1 that comparative studies of screening media are warranted, but also recommend the use of a broth enrichment step in association with an appropriate selective medium such as CAA for the isolation of VRE during the investigation of nosocomial outbreaks.

M FORD
JD PERRY
FK GOULD
KE ORR
Microbiology Department,
Frameben Hospital,
Freemaon Road,
High Heaton,
Newcastle upon Tyne NE7 7DN


Coronary artery dissection

Bateman et al4 describe an interesting spectrum of clinical presentation of spontaneous coronary artery dissection. Despite its rarity, the entity shows a striking constancy in the vessels involved and the presence of an inflammatory infiltrate rich in eosinophils. These features were also seen in a recent necropsy in our department. The patient, an obese 43 year old woman with no recent pregnancy, had a background of mild hypertension not requiring medical therapy. She complained of severe back pain one evening, and died the following morning. At necropsy, the heart weighed 400 g. The left anterior descending coronary artery was occluded by thrombus from its origin, and a dissection, clearly visible grossly, extended the length of the artery. There was no atheroma, and histologically, no abnormal accumulations of mucin and no evidence of systemic vasculitis. No intimal tear was identified. Like cases 2 and 3 reported by Bateman et al, in which there was an interval between onset of symptoms and death, there was an adventitial infiltrate with prominent eosinophilic infiltrate. The dissection in our case was mostly between the media and adventitia, internal to the external elastic lamina, with small foci in the outer media. We have seen dissection in this location in a previously reported case,5 as have others.6 It seems likely that it overlaps with the dissection in the outer third of the tunica media, and does not justify the description of "unusual" as suggested.7 Finally, increased awareness of this entity may mean that early presentation may result in salvage of some cases.

EE MOONEY
GSA MCDONALD
Department of Histopathology,
St James's Hospital,
Trinity College,
Dublin, Ireland


Effects of interleukins on the proliferation and survival of chronic lymphocytic leukaemia cells

Mainou-Fowler et al5 report in their interesting study of the in vitro response of B chronic lymphocytic leukaemia (B-CLL) cells to interleukins that the effects of interleukin-4 (IL-4), IL-6, and IL-10 on B-CLL cell proliferation and survival, as measured by 24 hour [3H] thymidine incorporation, are different. They propose that "IL-4 enhanced cell proliferation by ... 235% (123-400%) in four of 12 B-CLL cases" and that they propose that this variability in response is a result of variable B-CLL cell maturity and defective expression of receptors for growth factors. We suggest that their observations may be a result of heterogenous expression of the IL-4 receptor (IL-4R), as we have shown that B-CLL cells express IL-4Rb but there is no evidence of the expression of two species of high affinity receptor by these cells.7 Briefly, the presence of high affinity IL-4-R was determined by7 labelled IL-4 binding and Scatchard analysis using MLA-144 cells as a positive control.1 While a high affinity IL-4-R was detected in all six samples examined, there was evidence in some cases of expression of a distinct, and previously unreported, high affinity IL-4-R. Thus, four of six samples expressed the conventional high affinity IL-4-R, Kd 17-95 pM, which was of similar affinity to the IL-4-R expressed by MLA-144, Kd 22-45 pM, but two of six samples expressed a high affinity receptor, Kd 293-549 pM. The IL-4R was initially thought to be composed

One noticeable trend in scientific publishing over the past few years has been the advent of the plastic comb-bound laboratory manual, full of detailed step by step recipes which can be followed at the bench. No doubt the popularity of these books is partly explained by the explosion in the number and complexity of techniques which have been developed in biomedical science, and because of the reluctance of some authors, despite the pleas of journal editors, to provide adequate details of techniques in refereed publications. There have been a large number of extremely useful publications which have found a permanent position in many laboratories, but I fear that this book is unlikely to join them on the shelves above the laboratory bench.

This book arose from a basic tissue culture course given by the author at the Boston University School of Medicine. It does contain some recipes, but the book is mainly an exposition of the basic principles of cell culture. It covers the usual aspects of basic technique, including aseptic technique and sterilization, routine manipulation of cell cultures, preparation of primary cultures, and cell preparation for some more advanced aspects, including cloning, transfection and transfection. There are brief appendices about the cell cycle, formulation of media and culture solutions and a list of vendors aimed at the North American market.

There are two main bodies of text, one on the cell culture dishes and the other on animal and human cell cultures. There are a large number of technical matters described in the text with which I do not agree—for example, pouring from one bottle into another and I would not use a gas flame for routine cell culture purposes in a class II biological safety cabinet. I also have little faith in ultraviolet lamps in culture hoods as effective surface sterilizers. It is impossible to know the ultraviolet (as opposed to visible blue light) output of a lamp and how quickly the output is deteriorating. A single grain of dust can cast a shadow which can shade millions of bacteria from the ultraviolet light. There are also a number of important topics which a student learning cell culture for the first time should be aware of and which are not covered. A major omission is any discussion of cell culture cross-contamination. This is certainly more common than most people realize and the practical measures needed to prevent this and to detect that it has occurred should form part of any introductory book on cell culture.

There is no doubt that there is a need for laboratory manuals which describe particular techniques in detail, together with a realistic description of what can go wrong and how to troubleshoot, primarily aimed at the relatively experienced bench scientist who has mastered a number of techniques and can appreciate when he or she is going wrong, but who wishes to try something new. There is also a need for introductory books for the novice but this area is already well catered for with a number of better produced books available, with more and considerably better illustrations. I wonder to whom this particular book is likely to appeal? It is very doubtful that someone who has never done cell culture could pick up this book and start on one of those who already know the basics there is very little in this book which would be useful.

J. L. DARLING