

Letters to the Editor

point out the great biological variations that characterise interactions between bacteria and immune cells and further stimulate other studies on this interesting topic with special attention to clinical applications.

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Adherence of neomycin to the tubing of a plate pouring machine

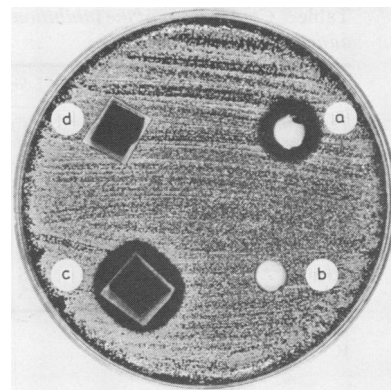
For the past two years in our laboratory, selective and non-selective media have been made using two Herdial Jouan media preparators. These are small autoclaving units capable of sterilising up to 5 litres of agar medium. Agar is dispensed from the stainless steel sterilising chamber by being pumped through silicone rubber tubing

into petri dishes via a plate pouring machine, which controls the operation. The stainless steel container is relatively easy to clean. The tubing is flushed through with hot water and autoclaved before reuse.

In June 1983 some batches of diagnostic sensitivity test agar (DST, Oxoid CM 261) inhibited the growth of certain strains of staphylococci. The effect was intermittent, and most noticeable on plates poured at the beginning of an affected batch. Blocks of agar cut from these plates were inhibitory when placed on a lawn of the sensitive staphylococci (see Figure, block labelled c). The tubing of the machine had been in use for some time and was discoloured. This suggested that chemicals from a previous pouring might adhere to the tubing, and, despite washing and autoclaving, leach out into the next medium poured. To test this hypothesis the tubes were filled with water and sonicated for 30 min. The washings from inside the tubes inhibited the staphylococci (Figure, well labelled a).

Eight inhibitory compounds were added to media poured by the machine. Solutions of these were sterilised in the usual way and then autoclaved at 115°C for 10 min to mimic the treatment of the tubing. The activities of these substances were compared with the activity of the inhibitory washings and plugs of inhibitory DST on plates lawned with different organisms. Preliminary screening of the additives was done on plates lawned with coagulase negative staphylococci and a salmonella. The washings and the plug of DST gave 15-19 mm zones on the staphylococcal lawns but did not inhibit the salmonella. Comparison of the pattern of inhibition led to four compounds being excluded from further tests, leaving neomycin, vancomycin, and solutions A and B (used in making deoxycholate citrate agar). After finding the dilution of each solution which produced a 15-19 mm zone of inhibition on the lawns of staphylococci, we tested these four compounds against a range of organisms. The results are summarised in the Table.

The washings and the DST plug gave zones with the coagulase negative staphylococci only, and neomycin was the only substance to give a similar pattern. The concentration of neomycin which produced a comparable zone to the washings and the DST plug was 0.04 mg/l. This concentration was too low to be detected by other methods, so the identity of the inhibitory substance could not be absolutely confirmed. Two other observations, however, support neomycin as the active



Effect of washings from a tube used to pour neomycin plates (a and b) and of inhibitory blocks of DST (c and d) on a strain of Staphylococcus epidermidis. (a) Washings filtered through medium Postlip paper before being used to fill the well. (b) Washings filtered through phosphocellulose paper before being used to fill the well. (c) Block standing on medium Postlip paper. (d) Block standing on phosphocellulose paper.

agent. Firstly, when the indicator strains were tested for sensitivity to a 10 µg neomycin disc, the coagulase negative staphylococci gave zones of 25-29 mm, but the remaining indicator strains gave zones of 19 mm or less. Secondly, phosphocellulose impregnated paper (which absorbs out aminoglycosides¹) removed the inhibitory effect of the washings, the DST block (see Figure), and the diluted neomycin, though not that caused by the other substances.

We have been unable to find a previous reference to difficulties caused by neomycin adhering to equipment. The final concentration in our neomycin agar is 50 mg/l and it was a surprise that sufficient remained behind in the tubing to affect the next medium poured by the machine. The effect was detected with the DST only, presumably because coagulase negative staphylococci were not looked for on the other media poured by machine. For a short time an attempt was made to keep one set of new tubing for pouring neomycin agar. After two weeks use, washings from this tube were tested and found to give 11-14 mm zones of inhibition. It is probably therefore desirable to avoid preparing neomycin agar in machines using tubing of

Table Comparison of the inhibition produced by washings and a DST plug with that produced by four of the compounds added to media

Test compound	Sensitivity of organism		
	Coagulase negative staphylococci (6 strains)	Staphylococcus aureus (2 strains) Streptococcus pyogenes (1 strain)	Enterobacteria (3 strains)
Washings	S	R	R
DST plug	S	R	R
Neomycin	S	R	R
Vancomycin	S	S	R
Solution A	S	S	R
Solution B	S	S	R

S = zone of 10 to 26 mm.

R = no zone.

this type and manufacturers should warn laboratories of the danger.

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Reference

Stevens P, Young LS. Simple method for elimination of aminoglycosides from serum to permit bioassay of other antimicrobial agents. *Anti-microb Agents Chemother* 1977;12:286-7.

Book review

Clinical Pathology of the Endocrine Ovary. Ed J de Brux and J-P Gautray. (Pp 184; £29.95.) MTP Press Limited. 1984.

The title of this book is misleading for only six of the twelve chapters can be considered as "pathological", the remainder being devoted to such subjects as the role of the mesonephros in ovarian embryology, ovarian follicular biodynamics, and somewhat inexplicably, the hormonal control of testicular Leydig cell function. The papers relating to clinical pathology include comments on non-ovulatory follicles, the menopausal ovary, and ovary in pregnancy, luteal phase defect, and the gonadotrophin resistant ovary. Of these, the discussion of non-ovulatory follicles is detailed and interesting, whilst the two chapters devoted to the menopausal and post-menopausal ovary are worthwhile. The chapter on the ovary in pregnancy is inadequate and uninformative whilst that on the investigation of luteal defect is excessively detailed and totally confusing.

This volume will be of interest only to those pathologists with a profound interest in the ovary; it has little to offer to those who have resisted the wiles of this fascinating and wayward organ. It is not intended

for, nor does it merit, a place in the routine pathology laboratory: its merits, which are far from outstanding, are diminished by an unsatisfactory and at times bizarre translation.

H FOX

Notice

Acta Stereologica

Acta Stereologica, a journal published on behalf of the International Society for Stereology (ISS), publishes twice yearly papers pertaining to various aspects of morphometry and quantitative image analysis from mathematics and instrumentation to the materials and life sciences, both theoretical and applied. Papers submitted for publication are reviewed by leading scientists in the field. Annual subscription price is US\$ 30 (for ISS members US\$ 15). For further information and a free specimen please contact the Editorial Office of Acta Stereologica, Institute of Histology and Embryology, Medical Faculty, University 'Edvard Kardelj' at Ljubljana, Yugoslavia.

Some new titles

The receipt of books is acknowledged, and this listing must be regarded as sufficient return for the courtesy of the sender. Books that appear to be of particular interest will be reviewed as space permits.

Second Cancer in Relation to Radiation Treatment for Cervical Cancer. IARC Scientific Publications no 52. Ed NE Day and JD Boice. (Pp 207; £17.50.) World Health Organisation. 1984.

Directory of On-Going Research in Cancer Epidemiology 1984. Ed CS Muir and G Wagner. (Pp 728; soft cover £18.) World Health Organisation. 1984.

Nutritional Assessment. Ed RA Wright and S Heymsfield. (Pp 290; £29.50.) Blackwells. 1984.

Human Cataract Formation. Ciba Foundation Symposium No 106. (Pp 284; £26.50.) Pitman Books. 1984.