Technical methods

References

- ¹ Sikora K. Monoclonal antibodies in oncology. *J Clin Pathol* 1982;35:369-75.
- ² Stein H, Heryet A, Gatter KC, Mason DY. Freeze-dried paraffin-embedded human tissue for antigen labelling with monoclonal antibodies. *Lancet* 1984;ii:71-3.
- ³ Barbatis C, Woods J, Morton JA, Fleming KA, McMichael A, McGee JOD. Immunohistochemical analysis of HLA(A,B,C) antigens in liver disease using a monoclonal antibody. *Gut* 1981;22:985-91.
- ⁴ Eggink HF, Houthoff HJ, Huitema S, Gips CH, Poppema S. Cellular and humoral immune reactions in chronic active liver disease. I. Lymphocyte subsets in liver biopsies of patients with untreated idiopathic autoimmune hepatitis, chronic active hepatitis B and primary biliary cirrhosis. *Clin Exp Immunol* 1982;50:17-24.
- ⁵ Husby G, Blomhoff JP, Elgjo K, Williams RC Jr. Immunohistochemical characterization of hepatic tissue lymphocyte subpopulations in liver disease. *Scand J Gastroenterol* 1982;17:855-60.
- ⁶ Montano L, Aranguibel F, Boffill M, Goodall AH, Janossy G, Thomas HC. An analysis of the composition of the inflammatory infiltrate in autoimmune and hepatitis B virus-induced chronic liver disease. *Hepatology* 1983;3:292-6.
- ⁷ Govindarajan S, Uchida T, Peters RL. Identification of T lymphocytes and subsets in liver biopsy cores of acute viral hepatitis. *Liver* 1983;3:13-18.
- ⁸ Ballardini G, Bianchi FB, Doniach D, Mirakian R, Pisi E, Botazzo GF. Aberrant expression of HLA-DR antigens on bile duct epithelium in primary biliary cirrhosis: relevance to pathogenesis. *Lancet* 1984;ii:1009-12.
- ⁹ Maynard JE. Nosocomial viral hepatitis. *Am J Med* 1981;70:439-44.
- ¹⁰ Collings LA, Poulter LW, Janossy G. The demonstration of cell surface antigens on T cells, B cells and accessory cells in paraffin-embedded human tissues. *J Immunol Methods* 1984;75:227-40.
- ¹¹ McLean IW, Nakane PK. Periodate-lysine-paraformaldehyde fixative: a new fixative for immunoelectron microscopy. *J Histochem Cytochem* 1979;27:1131-9.
- ¹² Scheuer PJ. *Liver biopsy interpretation*. 3rd ed. London: Ballière Tindall, 1980.
- ¹³ Borowitz MJ, Croker BP, Burchette J. Immunocytochemical detection of lymphocyte surface antigens in fixed tissue sections. *J Histochem Cytochem* 1982;30:171-3.
- ¹⁴ Hancock WW, Becker GJ, Atkins RC. A comparison of fixatives and immunohistochemical techniques for use with monoclonal antibodies to cell surface antigens. *Am J Clin Pathol* 1982;78:825-31.
- ¹⁵ Hsu S, Zhang H, Jaffe ES. Utility of monoclonal antibodies directed against B and T lymphocytes and monocytes in paraffin-embedded sections. *Am J Clin Pathol* 1983;80:415-20.
- ¹⁶ Epenetos AA, Bobrow LG, Adams TE, Collins LM, Isaacson PG, Bodmer NF. A monoclonal antibody that detects HLA-D region antigen in routinely fixed wax embedded sections of normal and neoplastic lymphoid tissues. *J Clin Pathol* 1985;38:12-7.

Requests for reprints to: Professor PJ Scheuer, Department of Histopathology, Royal Free Hospital, Pond Street, London NW3 2QG, England.

Letters to the Editor

Pseudomonas maltophilia

The article by Wheat, Winstanley, and Spencer¹ discusses discrepant results for susceptibility testing of *Pseudomonas maltophilia* with aminoglycosides and polymyxin.

In 1981, in the May 30 edition of the *Medical Journal of Australia*, Guinness and Levey described a widespread epidemic of infection caused by *Pseudomonas cepacia*.² In this article it was noted that *Ps cepacia* appeared to be fully sensitive to kanamycin by disc testing, although quantitative testing showed this result to be false. A variation was also noted with carbenicillin.

It was suggested that a false zone of sensitivity with kanamycin may have been a combination of factors. Included among the suggested causes were the slower growing nature of the organism compared with enteric Gram negative bacilli. Another important factor could well be that *Ps cepacia* would produce alkaline by-products of metabolism, which would diffuse into the test medium and strongly enhance the activity of kanamycin.

With respect, I feel that the main point to be made is that disc sensitivity testing has been standardised using particular media, taking into account the commonly encountered pathogens. When more unusual pathogens with special growth requirements are found the disc method may not be the definitive method of choice, and a more conservative approach to the problem may be required.

JM LEVEY
Science III Microbiology,
Repatriation General Hospital,
Concord, New South Wales 2139,
Australia

References

- ¹ Wheat PF, Winstanley TG, Spencer RC. Effect of temperature on antimicrobial susceptibilities of *Pseudomonas maltophilia*. *J Clin Pathol* 1985; 9:1055-8.
- ² Levy JM, Guinness MDG. Hospital microbial environment. Need for continual surveillance. *Med J Aust* 1981;1:590-2.

Dr Spencer and colleagues reply as follows:

With respect, the main point of our paper was not that discrepant results occurred between disc sensitivity and minimum inhibitory concentrations, but that the difference in results occurred due to difference in temperature. In our study strains of *Ps maltophilia* had identical susceptibility results whether they were measured by disc or minimum inhibitory concentrations at the same temperature. Dr Levey discusses the problems encountered with *Ps cepacia*, an organism that we have not investigated, although we were unable to show this temperature phenomenon with *Ps aeruginosa*. Although it may be true that disc susceptibility testing has been standardised with common organisms and certain media, we have never suggested that the disc technique is the method of choice, especially when dealing with unusual pathogens.

RC SPENCER
TG WINSTANLEY
PF WHEAT
Department of Microbiology,
Royal Hallamshire Hospital,
Glossop Road,
Sheffield, S10 2JF, England