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The marriage of pathology specimen tubes and request forms

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In recent years, the work-load of pathology laboratories has increased enormously and several hundred specimens for investigation may be received daily. In many hospitals specimens and their corresponding request forms arrive at the laboratory in jumbled confusion, and the first job of the laboratory technician is the tedious and time-consuming chore of sorting the request forms and matching them to the appropriate specimens.

This problem has been solved in some laboratories by using polythene bags to enclose the specimen and the request form, or by printing the details of the

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request form on an envelope which is used to contain the specimen. These methods are effective but are also fairly expensive. Suitable polythene bags are approximately 0.6p each and the cost of the request form (approximately 0.2-0.3p) must be added to this figure. The combined request form/envelope (as used, for example, in the Department of Clinical Chemistry, General Hospital, Birmingham) is cheaper at approximately 0.6p each, but this system is not compatible with the means of data processing employed by some laboratories.

The method reported here is illustrated in the figure. Preliminary pilot trials showed that two slits, 38 mm wide and 43 mm apart, were found to be most suitable for the large tubes used (9.8 cm long $\times$ 1.4 cm diameter) and were cut in the request form (size A6, that is, 14.3 $\times$ 10.2 cm) which is printed on 3 Sheet Board. The uppermost slit was 35 mm from the top of the form. These dimensions were chosen because the tube is attached securely to the

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form and the patient's name label is visible between the slits. These forms cost 0.26p each and, because the slits are cut during the printing process, no extra cost is involved.

The system was designed specifically for 9.8 cm long, 1.4 cm diameter blood tubes which form a large part of the work-load, but in practice it has been found that swabs and other tubes can be used with the forms. Specimens which may be dangerously infected are not transported in the slitted forms. We are currently looking into the possibility of obtaining small polythene bags, approximately 13 cm long × 4 cm wide, into which high-risk specimens may be placed, thus allowing the tube to be wrapped before

it is inserted into the form. These small bags should be significantly cheaper than the larger ones currently in use.

Slitted forms have been in use in this hospital since October 1974 and have been well received. It is very unusual for a specimen to become separated from the request form, and the slits do not interfere with the subsequent photo-copying and filing of the reports. The system has the advantage that the doctor is given the opportunity to check that the specimen is labelled when it is inserted in the form. Furthermore, it eliminates the frustration caused by specimens arriving without request forms and *vice versa*.

A method for distinguishing sheep erythrocytes adherent to human tissue sections

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Lymphocyte subpopulations and histiocytes may be identified in frozen sections of human and mouse tissues by means of known differences in cell membrane receptors (Edelson *et al*, 1973). Briefly, sheep erythrocytes complexed with anti-sheep red cell IgM and mouse complement, or alternatively coated with anti-sheep red cell IgG alone, are layered on frozen sections. Sheep erythrocytes remaining adherent following washing of the treated sections act as particulate markers of complement receptor bearing lymphocytes and IgG receptor bearing histiocytes respectively in the underlying tissue sections.

Phase-contrast and dark-ground microscopy help in the detection of bound erythrocytes, but visualization, particularly photomicrography, has been difficult.

Amido Black B was introduced as a stain for haemoglobin (Puchtler and Sweat, 1962) and experience with this technique has led to its adoption for the demonstration of sensitized erythrocytes adher-

ing to tissue sections in this laboratory. Puchtler and Sweat claim specificity for the technique. Hodson (1967) believes that the rationale of the technique depends upon the affinity of Amido Black B for the globin moiety of the haemoglobin molecule and reflects structural chemistry rather than a histochemical reaction. The intense blue/black colour produced in erythrocytes lends itself admirably to photomicrography and contrasts well with many histological stains. Small numbers of adherent erythrocytes are easily detected and their tissue localization becomes simple.

The technique needs to be slightly modified for application to the adherent sheep erythrocytes and has been found to perform satisfactorily as follows:

1. Following exposure to the sensitized erythrocytes the tissue sections are washed in phosphate buffered saline and then fixed in 3% glutaraldehyde for 30 minutes.
2. Wash in phosphate buffered saline.
3. Treat with 5% tannic acid—10 minutes.
4. Wash in water and treat with freshly prepared 1% phosphomolybdic acid—20 minutes.
5. Wash in water and shake nearly dry.
6. Treat with a saturated solution of Amido Black 10B (Syr. Naphthalene black) in 9 vol: 1 vol methanol:acetic acid—30 minutes.
7. Rinse in methanol:acetic acid solution and then water.
8. Counterstain in 1% safranin—5 seconds.
9. Wash rapidly, dehydrate, clear, and mount.

Sites of adherent erythrocytes are readily visualized and may be distinguished from erythrocytes