References

- ¹ Viegas-Pequignot E, Dutrillaux B. Une méthode simple pour obtenir des prophases et des prométaphases. *Ann Genet (Paris)* 1978;**21**:122-5.
- ² Morris NR, Fischer GA. Studies concerning inhibition of the synthesis of deoxycytidine by phosphorylated derivatives of thymidine. *Biochim Biophys Acta* 1960;**42**:183-4.
- ³ Bjursell G, Reichard P. Effects of thymidine on deoxyribonucleoside triphosphate pools and deoxyribonucleic acid synthesis in Chinese hamster ovary cells. *J Biol Chem* 1973;**248**:3904-9.
- ⁴ Fox RM, Tripp EH, Tattersall MHN. Mechanism of deoxycytidine rescue of thymidine toxicity in human T-leukemic lymphocytes. *Cancer Res* 1980;**40**:1718-21.
- ⁵ Xeros N. Deoxyriboside control and synchronization of mitosis. *Nature* 1962;**194**:682-3.
- ⁶ Lundsteen C, Lind AM. A test of a climate room for preparation of chromosome slides. *Clin Genet* 1985;**28**:260-2.

Correspondence and requests for reprints to Dr R F Wheeler, Regional Cytogenetics Unit, University Hospital of Wales, Heath Park, Cardiff CF4 4XW.

G and R banding of 11p deletions in aniridia-Wilms' tumour

The association of aniridia and Wilms' tumour with a deletion of part of the short arm of chromosome 11, minimally the distal segment of band p13, is now well established.¹ In two unrelated infants with this condition referred to us recently for chromosome analysis, we have been able to demonstrate a particularly small deletion, apparently identical in each case. Examination of trypsin G banded preparations from lymphocyte cultures revealed a reduction in the length of the pale band 11p13 (fig 1a,b). Surprisingly, however, R banding after BrdU incorporation consistently showed loss of material from the adjacent band p14, while p13 was indistinguishable from its normal homologue (fig 1c,d). Thus, in both G banded and R banded preparations, the deletion appeared to be located in a negatively staining region. We interpreted this observation as deletion of the distal part of band p13 and the proximal part of p14 (fig 2), but confirmation of our interpretation was possible only in an occasional extremely well defined G banded preparation (from a kidney cell culture) in which deletion of the fine sub-band p14.1 could be demonstrated (fig 1e).

In a normal karyotype the sequence of chromosome bands relative to one another is constant, but

it is recognised that variation in measured positions, sizes, and intensities of bands is encountered with different staining techniques.² In particular, BrdU incorporation tends to reduce chromosome condensation³ which may enhance late replicating bands. Comparison of the G and R banding patterns produced by the two techniques used here reveals that bands tend to be relatively shorter when positively stained than when negatively stained. The discrepancy which we observed in our 11p deletions is believed to be a consequence of this phenomenon, possibly accentuated by difficulty in resolving the sub-band p14.1, and therefore no more than a technical artefact.

The techniques we employed in elucidating these deletions are based on standard procedures^{3,4} used widely in diagnostic cytogenetics, and therefore the

FIG 1 Homologues of chromosome 11, normal chromosome to the left. Band p13 is indicated by an arrow. (a) G banding, patient 1, (b) G banding, patient 2, (c) R banding, patient 1, (d) R banding, patient 2, (e) G banding, patient 1, showing deletion of p14.1 (from kidney cell culture).

Received for publication 10 October 1985.

Accepted for publication 11 October 1985.

FIG 2 Diagrammatic representation² of the short arm of chromosome 11 showing postulated extent of the deletion.

following conclusions drawn from our observations may be important in the interpretation of a variety of chromosome anomalies: (1) deletion from a negatively staining band may be detected more readily; (2) the use of more than one banding technique is valuable in the confirmation of subtle

chromosome rearrangements; and (3) precise delineation of breakpoints based on a single banding technique should be approached with caution.

R T HOWELL, ANNE GARDNER,
AND VALERIE DICKINSON
SW Regional Cytogenetics Centre,
Southmead Hospital, Bristol.

References

- ¹ Schinzel A. *Catalogue of unbalanced chromosome aberrations in man*. Berlin, New York: de Gruyter, 1984;429-31.
- ² ISCN. An international system for human cytogenetic nomenclature—high resolution banding. *Cytogenet Cell Genet* 1981;**31**:1-23.
- ³ Dutrillaux B, Fosse AM. Sur le mécanisme de la segmentation chromosomique induite par le BUdR (5-bromodéoxyuridine). *Ann Genet (Paris)* 1974;**17**:207-11.
- ⁴ Seabright M. A rapid banding technique for human chromosomes. *Lancet* 1971;ii:971.

Correspondence and requests for reprints to Mr R T Howell, SW Regional Cytogenetics Centre, Southmead Hospital, Bristol BS10 5NB.