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The Journal is published monthly on behalf of the Cancer Research Campaign by the Scientific and Medical Division of Macmillan Press Ltd.

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Cover Illustration. The existence of poorly oxygenated, radioresistant cells in tumours is thought to be one of the factors contributing to local failure of radiotherapy. An immunologically-detectable hapten, theophylline, covalently bound to a 2-nitroimidazole has been used to detect hypoxic cells. The structure of the compound is shown on the top right of the cover and immunochemical detection of bound compound in a mouse mammary tumour is shown below. Detection of stained cells by flow cytometry together with co-staining for cellular DNA (left-hand side of cover) allows discrimination of single cells in a tumour sample and rejection of cell clumps and debris. See paper by Hodgkinson et al. (this issue p119).

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Printed in Great Britain by Unwin Brothers Ltd, The Gresham Press, Old Woking, Surrey
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