agent restored expression levels of the *TGF-βRII* gene. If future studies confirm that methylation of the *TGF-βRII* gene promoter element is reversible and specific to prostate cancer, it could be a promising new target for prostate cancer therapy.

Claire Braybrook

Original article Zhao *et al.* (2005) CpG methylation at promoter site –140 inactivates *TGFβ2* receptor gene in prostate cancer. *Cancer* **104:** 44–52

Prognostic role of survivin expression in pancreatic cancer

Pancreatic tumors are generally resistant to conventional chemoprevention therapies, and pancreatic cancer is associated with poor long-term survival. The role of apoptosis and inhibitors of the apoptotic proteins in pancreatic cancer carcinogenesis has not been clearly defined. Tonini and colleagues have started to address this issue by evaluating the role of the expression of the apoptotic inhibitor protein survivin (and its cellular distribution) and cyclooxygenase 2 (COX2) expression in the prognosis of pancreatic cancer.

In total, tumor specimens from 67 patients who had undergone radical surgery for pancreatic adenocarcinoma were eligible for inclusion in the study. Immunohistochemical techniques were used to determine the expression of survivin and COX2, and TUNEL staining was used to identify apoptotic cells.

The results demonstrated that the cellular location of survivin determined its prognostic effect, in that a significantly more favorable prognosis was associated with nuclear overexpression, whereas cytoplasmic overexpression conferred a negative prognosis ($P = 0.0009$). The apoptotic index, on univariate analysis, was also found to be a significant prognostic factor for longer survival. Conversely, however, COX2 expression was not found to be of prognostic value in these patients.

The authors conclude that their study is the first to demonstrate the importance of the cellular distribution of survivin overexpression in the prognosis of patients with pancreatic cancer.

Katy Cherry

Original article Tonini G *et al.* (2005) Nuclear and cytoplasmic expression of survivin in 67 surgically resected pancreatic cancer patients. *Br J Cancer* **92:** 2225–2232

A novel biomarker with high sensitivity for hepatocellular carcinoma

High mortality rates for hepatocellular carcinoma (HCC) and the increased prevalence of causative factors, such as chronic hepatitis and cirrhosis, have elicited a search for novel biomarkers with improved specificity and sensitivity in the early detection of HCC. Beneduce *et al*. have recently developed ELISA assays to compare the diagnostic accuracy of squamous cell carcinoma antigen (SCCA) variants, identified as being overexpressed in the livers of patients with HCC, with α-fetoprotein (AFP), currently the biomarker most widely used in the detection of HCC.

The serum from 73 healthy volunteers and 160 patients with various liver diseases, including 50 with HCC, were analyzed for the presence of SCCA, as free protein and in complex with immunoglobulins. Histologic analysis of liver biopsies was also performed for a subset of patients and healthy controls. SCCA–IgM complexes were detected in 70% of patients with HCC, but were undetectable in any of the healthy subjects. This result was matched by SCCA overexpression in the liver samples of patients with HCC (93% were reactive). The accuracy of SCCA–IgM complexes in discriminating between HCC and both chronic hepatitis and cirrhosis was higher than that of AFP. Free SCCA, anti-SCCA IgMs or IgGs, and SCCA–IgG complexes, were not found to be significantly elevated in patients with HCC, however. The authors concluded that SCCA–IgM complexes can significantly increase the sensitivity of diagnosis for HCC in at-risk patients.

Alexandra King

Original article Beneduce L *et al.* (2005) Squamous cell carcinoma antigen–immunoglobulin M complexes as novel biomarkers for hepatocellular carcinoma. *Cancer* **103:** 2558–2565

Novel method for distinguishing between metastatic and benign pheochromocytoma

Metastasis of pheochromocytoma (a rare, catecholamine-producing tumor of chromaffin cells) occurs in up to 36% of patients, with a 50% mortality rate at 5 years. Currently, there are no markers that can reliably distinguish

GLOSSARY

ELISA
Enzyme-linked immunosorbent assay

TUNEL
Terminal deoxynucleotidyl transferase-mediated deoxyuridine triphosphate biotin nick-end labeling