GLOSSARY

ELISA

Enzyme-linked
immunosorbent assay

Magic roundabout protein: a possible prognostic indicator in patients with NSCLC

A recently discovered endothelial-specific gene, magic roundabout (MR; *ROBO4*), which has a proposed role in angiogenesis, was the focus of a recent analysis by Görn and co-workers at the University Hospital Hamburg-Eppendorf and the German Cancer Research Centre. The authors investigated the relationship between pre-chemotherapy serum levels of MR protein and outcome in patients with advanced non-small-cell lung cancer (NSCLC).

Using anti-MR-protein polyclonal antibodies and an ELISA method, the pretreatment sera of 193 nonselected patients with either stage IIIB or stage IV NSCLC were tested for the presence of MR protein. Patients formed a subset of a larger cohort enrolled in a randomized phase III trial of two chemotherapy regimens (gemcitabine and vinorelbine [GV] and gemcitabine, vinorelbine, and cisplatin [GVP]) between September 1999 and June 2001. The median survival time of patients with serum MR-protein levels below the median (0.652 [wavelength 450 nm]) was 41.0 weeks, which was just significantly longer than that of those with MR-protein levels above the median (32.4 weeks) ($P=0.05$). In a univariate Cox regression analysis, however, the serum MR-protein concentration showed no prognostic significance ($P=0.24$; hazard ratio 1.26). Other variables, such as treatment arm, disease stage and histologic subtype, had no significant effect on overall survival. To the authors' knowledge, these are the first data linking MR expression with survival in patients with NSCLC.

Alexandra King

Original article Görn M *et al.* (2005) Serum levels of Magic Roundabout protein in patients with advanced non-small cell lung cancer (NSCLC). *Lung Cancer* **49**: 71–76

Links between ERK phosphorylation status and response to breast cancer treatment

Extracellular signal-regulated kinases (ERKs) are signaling proteins that are regulated by reversible phosphorylation. They are involved in many cellular processes, including differentiation,

migration, proliferation and cell death. Studies have found increased expression and activity of ERKs in cancer tissue, and an association with relapse after treatment. To clarify the role played by ERK proteins 1 and 2 (ERK1/2) in the signaling cascade in breast cancer, Svensson *et al.* studied three cohorts of patients with various stages of breast cancer, comprising 886 patients who received a variety of treatments (cohort I), 248 postmenopausal patients randomized during an earlier trial to receive either no adjuvant treatment or treatment with tamoxifen (cohort II), and a reference group of 524 consecutively diagnosed patients (cohort III).

The authors determined the ERK-phosphorylation status of primary tumor tissue using immunohistochemistry and assessed its effect on the response to tamoxifen treatment and clinical outcome. Higher levels of ERK1/2 phosphorylation correlated with smaller tumor size in two cohorts, and with longer survival in 'untreated' patients from cohort II. Estrogen-receptor-positive tumors respond well to tamoxifen, but ERK1/2 phosphorylation abrogated the response. The authors determined a signaling cascade leading from vascular endothelial growth factor receptor 2 to ERK1/2 phosphorylation to phosphorylation of the gene-transcription factor Ets-2. ERK 1/2 phosphorylation status correlated significantly with Ets-2 phosphorylation, and phosphorylation of this transcription factor was inversely associated with tumor size. Information from this study could help to improve strategies for tamoxifen treatment and might be of value when determining prognosis.

Rebecca Ireland

Original article Svensson S *et al.* (2005) ERK phosphorylation is linked to VEGFR2 expression and Ets-2 phosphorylation in breast cancer and is associated with tamoxifen treatment resistance and small tumours with good prognosis. *Oncogene* **24**: 4370–4379

Gefitinib in advanced breast cancer

The epidermal growth factor receptor (EGFR) is one of a family of receptors known to promote malignant growth of breast cancer cells. Inhibitors of this receptor are therefore being investigated as potential new therapies for this disease. This multicenter phase II trial aimed to assess tumor response to the EGFR inhibitor