

Having demonstrated that melanoma cells were less sensitive to gimatecan following *Bcl-2* transfection, the investigators showed that this sensitivity increased when the drug was added to the cells in combination with oblimersen. Next, they examined the effects of both drugs *in vivo* using two human melanoma xenografts with different *Bcl-2* expression levels. In both xenograft models, oblimersen appeared to enhance the antitumor effects of gimatecan treatment, allowing inhibition of tumor growth and delayed tumor regrowth. This positive outcome was achieved at the expense of a dose-dependent increase in gimatecan toxicity, however; the authors note that tolerability could be improved by introducing a recovery interval between gimatecan courses.

In conclusion, the study supports the use of oblimersen and gimatecan combination treatment for melanoma. Both agents are now undergoing clinical development.

**Original article** De Cesare M *et al.* (2005) Enhanced antitumour efficacy of gimatecan in combination with *Bcl-2* antisense oligonucleotide in human melanoma xenografts. *Eur J Cancer* **41**: 1213–1222

## Breast cancer screening in young women

To address the need for a new screening modality to improve the early detection of breast cancer in young women, Stojadinovic and colleagues have explored the use of electrical impedance scanning (EIS). This technology exploits the difference in electrical impedance properties between malignant and normal tissue, and has been approved in the US as an adjunct to mammography. Since mammography is considered inappropriate in young women, the authors asked whether EIS could be used in conjunction with clinical breast examination.

A total of 1,103 women were examined using the T-Scan™ 2000ED EIS scanner (Mirabel Medical Systems, Austin, TX) in addition to clinical breast examination, imaging or biopsy. Twenty-nine biopsy-confirmed cancers were diagnosed, of which 19 (66%) were non-palpable and six (21%) occurred in women younger than 40 years of age. The specificity of EIS was 90%. At 50%, the sensitivity of EIS was “relatively low”, although the authors point out that the procedure is designed for the detection of nonpalpable lesions, which would

not be identified by clinical breast examination. They conclude, therefore, that EIS shows promise in this setting.

**Original article** Stojadinovic A *et al.* (2005) Electrical impedance scanning for the early detection of breast cancer in young women: preliminary results of a multicenter prospective clinical trial. *J Clin Oncol* **23**: 2703–2715

## Garlic extract and apoptosis in a human cancer cell line

Garlic has received considerable attention for its potential role in cancer prevention. A new study published in the *British Journal of Cancer* has looked into the mechanisms by which a garlic extract induces apoptosis in cancer cells *in vitro*.

Lund *et al.* prepared a water-soluble extract from garlic cloves and measured the concentration of thiosulfinates. They then used a standard MTS assay to measure the effect of the extract on the growth of MDA-MB-435 cells—a human cancer cell line that carries a mutated *p53* gene. A 24 hour exposure to the extract of thiosulfinates at a concentration of 15 µg/ml produced a 50% reduction in the number of living cells. Further analysis confirmed that the extract arrested the cells mainly in mitosis and induced apoptosis.

The garlic extract was associated with a significant increase in a phosphorylated form of the proapoptotic protein BimEL (which is normally bound to the microtubule-associated dynein motor complex) and its enrichment in the mitochondrial fraction; the apoptotic effect of garlic, therefore, is likely to be due in part to the disruption of microtubules and the translocation of BimEL to mitochondria.

**Original article** Lund T *et al.* (2005) Garlic arrests MDA-MB-435 cancer cells in mitosis, phosphorylates the proapoptotic BH3-only protein BimEL and induces apoptosis. *Br J Cancer* **92**: 1773–1781

## Refractory cancer pain and drug-related toxicity controlled by an implantable drug delivery system

Pain is the most prevalent and debilitating symptom associated with cancer, and current