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**68Ge calibration methodology:** Zimmerman and Cessna describe a technique for calibrating 68Ge radioactivity content in a commercially available source for activity calibrators in a way that is traceable to the national standard and extend this approach to 18F calibration. . . Page 448

Labeling octreotide with 18F: Laverman and colleagues present a 2-step, 1-pot method for rapid and efficient labeling of peptides with 18F. . . . . . . Page 454

**111In-NLS-trastuzumab radiosensitization:** Costantini and colleagues elucidate the mechanisms by which methotrexate radiosensitizes HER2-positive human breast cancer cells to the 111In-trastuzumab modified with nuclear-localization sequence peptides and determine the potential sensitizing effects of paclitaxel and doxorubicin when combined with this radiopharmaceutical. . . . . Page 477

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**Monte Carlo cellular dosimetry:** Cai and colleagues compare Monte Carlo N-particle 111In self- and cross-doses to breast cancer cell nuclei with doses calculated by other methods and determine whether Monte Carlo results can predict cell survival. . . . . . . . Page 462

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**ON THE COVER**

Monte Carlo N-particle simulation has been shown to compare well with 2 analytic methods in the calculation of subcellular S values. The radii of cells and nuclei have a profound effect on S values and may vary considerably. The cell and nucleus diameters of 6 commonly used breast cancer cell lines have been measured and reported for the first time.

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