

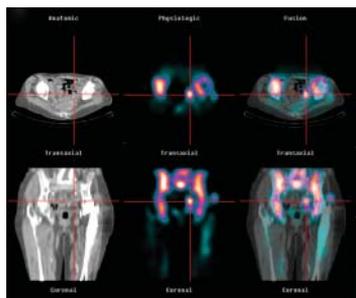
THIS MONTH IN JNM

Preclinical parameters and clinical success:

Mariani and colleagues provide perspectives on basic questions in the development of receptor-mediated tumor targeting with radio-labeled peptides and previews an article in this issue of *JNM* on a novel ligand-receptor system. **Page 1904**

SPECT/CT in bone and joint infection:

Filippi and Schillaci evaluate the usefulness of hybrid SPECT/CT with ^{99m}Tc -HMPAO-labeled leukocytes in functional anatomic mapping in patients with suspected bone infection and suspected orthopedic implant infection. **Page 1908**

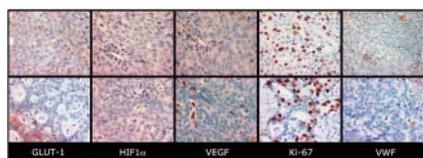


Reversing coronary endothelial dysfunction:

Morita and colleagues use ^{15}O -water PET quantitative measurements of myocardial blood flow to assess the effect of smoking cessation on coronary vasomotor response in a group of young adults. **Page 1914**

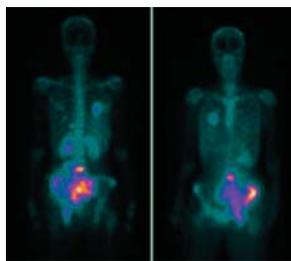
Hypoxia and angiogenesis in NSCLC:

Cherk and colleagues investigate aspects of angiogenesis and hypoxia in the biologic characteristics of newly diagnosed non-small cell lung cancer using ^{18}F -MISO and ^{18}F -FDG PET. **Page 1921**



Personalizing ^{186}Re -HEDP therapy:

Syed and colleagues examine the safety and efficacy of ^{186}Re -HEDP as an adjuvant to external-beam radiotherapy in the treatment of patients with osteosarcoma and emphasize the importance of individualized dose estimation and escalation techniques. **Page 1927**



Motion correction in PET:

Montgomery and colleagues review and compare strategies for managing head and neck movement in PET acquisition and describe the benefits of a system using motion tracking measurements. **Page 1936**

Osteoporosis redux:

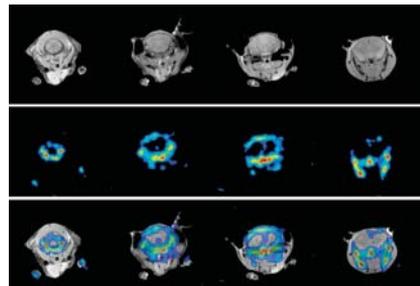
Lentle and Worsley provide an educational overview of postmenopausal osteoporosis, including its evolving definition, diagnostic approaches, changing conceptualizations of osteopenia and osteoporosis, and wide-ranging personal and social consequences. **Page 1945**

LYSO PET/CT assessed:

Kemp and colleagues report on industry standard performance measurements conducted on a whole-body PET/CT system based on lutetium yttrium orthosilicate technology. **Page 1960**

Simultaneous PET/MR:

Catana and colleagues describe initial small-animal imaging results with a novel MRI-compatible PET scanner based on avalanche photodiode technology and discuss the possibilities for dual-modality molecular imaging studies. **Page 1968**

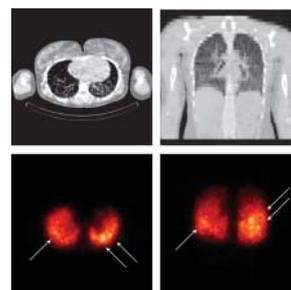


Dosimetry and the 80-mCi rule:

Sgouros and colleagues detail the potential of a dose-rate-based version of the 80-mCi threshold in ^{131}I -treated thyroid cancer patients with diffuse pulmonary metastases and highlight the possibilities for similar approaches in other clinical situations. **Page 1977**

^{131}I dosimetry and lung metastases:

Song and colleagues describe MCNP, a Monte Carlo electron and photon transport code, and 3D imaging-based absorbed dose calculation in patient-specific dosimetry for treatment planning in thyroid cancer with diffuse lung metastases. **Page 1985**



Predicting chemotherapy response:

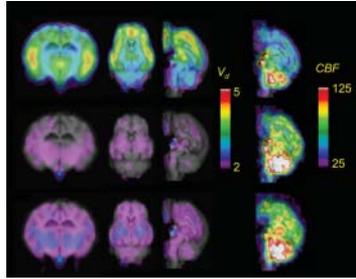
Hsueh and colleagues report on studies in a mouse model on the potential of ^{18}F -FPAC PET for specifically predicting the resistance of breast tumors to paclitaxel therapy. **Page 1995**

^{99m}Tc scintigraphy for angiogenesis

imaging: Jung and colleagues explore the

in vivo kinetics and tumor-imaging properties of a novel ^{99m}Tc -RGD compound that contains a glucosamine moiety and outline its potential for evaluation of tumor integrin expression and antiangiogenic therapeutics. **Page 2000**

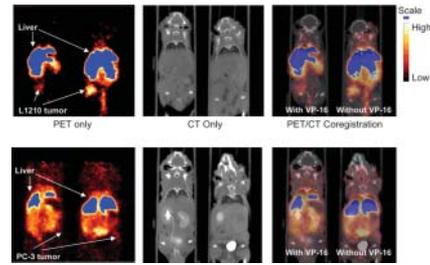
PET mapping of adrenoceptors: Jakobsen and colleagues detail the synthesis of ^{11}C -yohimbine, an α_2 -adrenergic antagonist, and characterize its binding, dosimetry, and whole-body kinetics in a swine model. **Page 2008**



Radioimaging amyloid burden: Wall and colleagues report on a novel strategy using a radiolabeled fibril-reactive murine monoclonal antibody as an amyloid-specific imaging agent and describe the pharmacokinetics, biodistribution, and specific targeting capabilities of this approach. . . . **Page 2016**

Targeting receptors in insulinomas: Wild and colleagues report on a tumor model for glucagon-like peptide-1 receptor targeting and on a novel radiolabeled DTPA conjugate with potential in imaging, therapy, and intraoperative tumor localization. **Page 2025**

Imaging tumor topoisomerase II: Wei and colleagues investigate the relationship between the in vitro and in vivo behavior of novel ^{64}Cu -thiosemicarbazone complexes and the expression of topoisomerase II, an essential enzyme in DNA replication and a widely used target for anticancer therapies. **Page 2034**

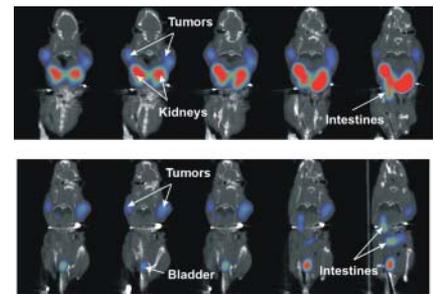


Bifunctional radiopharmaceutical: Ogawa and colleagues discuss the development and initial investigation of a ^{99m}Tc -chelate-conjugated bisphosphonate with high affinity

for bone and rapid clearance from blood, with significant potential for reducing time between dual tracer injections in bone scintigraphy. **Page 2042**

PET imaging of VEGFR expression: Cai and colleagues report on ^{64}Cu -labeled vascular endothelial growth factor PET imaging of receptor expression in a rat model and discuss the potential for imaging tumor angiogenesis and guiding antiangiogenic therapies. **Page 2048**

Antifolate and radiofolate uptake: Müller and colleagues investigate the potential for preadministration of antifolates in improving tumor-to-kidney ratios of radiofolates and providing a "therapeutic window" for radiolabeled folates that might otherwise be nephrotoxic. **Page 2057**



ON THE COVER

The coregistered PET and CT images at top were obtained with a threshold of 10% maximum intensity for PET, and the PET/CT image at bottom was obtained through isosurface rendering of PET data with a threshold of at least 60% maximum intensity. Animals receiving the test antibody showed confinement of radioactivity principally to a dorsal area corresponding to the amyloidoma, with negligible amounts in the blood pool. In contrast, animals receiving the control antibody showed negligible uptake in the blood pool or in the amyloid.

SEE PAGE 2023

