

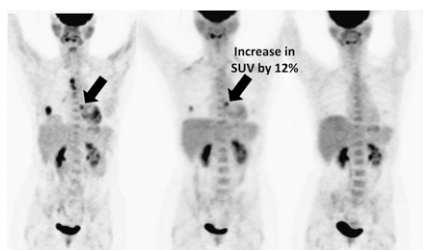
Future of CXCR4 agents: Woodard and Nimmagadda review recent developments in chemokine receptor 4-based imaging agents and their potential roles in molecular diagnosis and treatment of cancer. *Page 1665*

^{99m}Tc-annexinA5 and therapy timing: Lewis offers perspectives on the development and current status of anti-vascular endothelial growth factor therapy and previews a related article in this month's *JNM* that focuses on vascular normalization and apoptosis. *Page 1670*

PET costs in metastatic infection: Vos and colleagues present a cost effectiveness analysis of the introduction of ¹⁸F-FDG PET/CT in patients with gram-positive bacteremia, with findings on the benefits of early detection. *Page 1673*

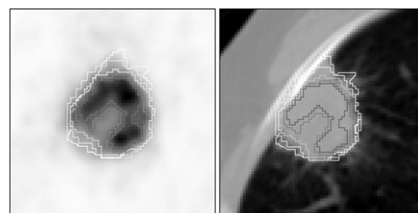
⁶⁸Ga-DOTATATE uptake and octreotide: Haug and colleagues assess the results of treatment with a long-acting somatostatin analog on ⁶⁸Ga-DOTATATE binding in neuroendocrine tumors. *Page 1679*

Treatment response to erlotinib: Benz and colleagues determine whether early changes in tumor uptake of ¹⁸F-FDG on PET can predict progression-free and overall survival in patients with non-small cell lung cancer treated with erlotinib. *Page 1684*

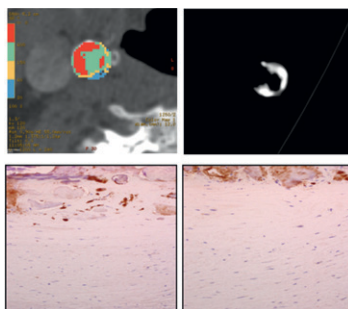


PET vs. CT NSCLC tumor delineation: Hatt and colleagues investigate the relationship between CT- and ¹⁸F-FDG PET-based tumor volumes in non-small cell

lung cancer and the effects of tumor size and uptake heterogeneity on PET uptake assessment. *Page 1690*

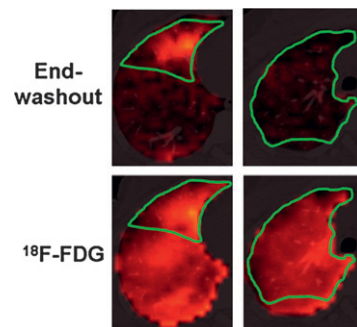


Carotid PET/CTA histologic validation: Menezes and colleagues combine PET, CT angiography, and immunohistochemistry to explore the contributing roles of inflammation, angiogenesis, and calcification in both plaque vulnerability and stability in patients undergoing carotid endarterectomy. *Page 1698*



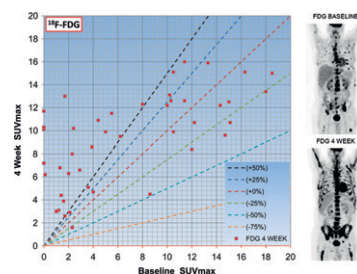
Coronary structure and cardiac perfusion: Liga and colleagues use PET and CT to investigate the effects of coronary luminal narrowing, structural abnormalities of the coronary arterial wall, and cardiovascular risk factors on regional and global myocardial blood flow reserve. *Page 1704*

¹⁸F-FDG uptake and eosinophils in asthma: Harris and colleagues report on research to determine whether ¹⁸F-FDG uptake rate on PET can serve as a biomarker of eosinophilic inflammation and local lung function. *Page 1713*



Repeated ¹⁸⁸Re-HEDP in bone metastases: Biersack and colleagues describe a study comparing the effects of single and multiple administrations of this radiolabeled agent on palliation and survival in prostate cancer patients presenting with more than 5 skeletal metastases. *Page 1721*

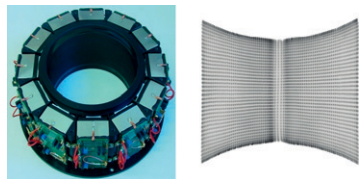
Multilesion molecular imaging: Fox and colleagues propose a 5-step, practical, standardized approach for comparative analysis of multilesion molecular imaging using a semiautomated program for PET/CT. *Page 1727*



Brain amyloid imaging: Rowe and Villemagne offer an educational overview of the role of biomarkers in more accurate and earlier diagnosis of Alzheimer disease, with a special focus on the status and potential of PET in imaging brain β -amyloid plaques. *Page 1733*

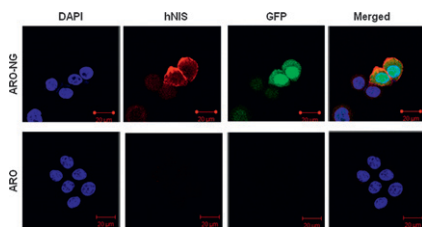
NanoPET/CT evaluation: Szanda and colleagues report on performance evalua-

tion of the PET component of the NanoPET/CT commercial small-animal imaging system according to National Electrical Manufacturers Association standards. **Page 1741**



Precision and sensitivity of ^{18}F PET: Siddique and colleagues evaluate several methods of analyzing ^{18}F -fluoride PET dynamic spine scans to identify the approach that requires the smallest sample size to detect statistically significant responses to treatment **Page 1748**

Combination therapy for thyroid cancer: Kim and colleagues research the effects of a lentiviral small-hairpin RNA targeting hexokinase II and human sodium iodide symporter gene expression combined with radioiodine treatment in anaplastic thyroid cancer in an animal model. **Page 1756**



Cerenkov imaging and PET: Robertson and colleagues compare PET and Ceren-

kov luminescence imaging (both with ^{18}F -FDG) assessments of a phase 2 oncology therapeutic agent in small-animal models of diffuse large B-cell lymphoma. **Page 1764**

PET and macrophages in peritoneal cancer: Cottone and colleagues use PET to evaluate and follow the contribution of tumor-associated, inflammatory infiltrating macrophages in tumor progression in a mouse model of peritoneal cancer. **Page 1770**

Intraoperative VEGF and HER2 imaging: Terwisscha van Scheltinga and colleagues apply antibody-based tumor detection to intraoperative optical imaging in mice. **Page 1778**

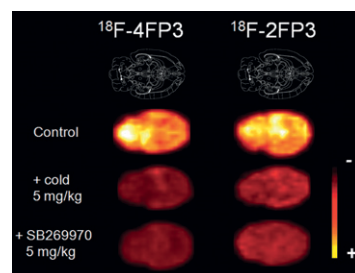
Identifying the normalization window: Vangestel and colleagues study the efficacy of an antihuman vascular endothelial growth factor antibody with or without irinotecan during chemotherapy delivery in colorectal cancer xenografts and focus on the importance of administration timing. **Page 1786**

MMP imaging and plaque heterogeneity: Razavian and colleagues explore an in vivo imaging approach for monitoring matrix metalloproteinase activation in atherosclerotic mouse aorta and use it to assess responses to dietary modification. **Page 1795**

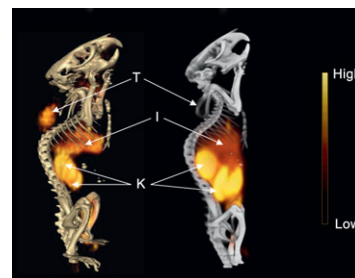
CXCR4 PET using ^{68}Ga -CPCR4-2: Gourni and colleagues evaluate the imaging and biokinetic characteristics of a small and optimized radiolabeled peptide that targets human CXCR4 receptor expression. **Page 1803**

Serotonin 5-HT₇ receptor neuroimaging: Lemoine and colleagues conduct studies comparing 4 radiolabeled structural

analogs of a specific brain serotonin receptor antagonist and describe successful PET imaging in animal models. **Page 1811**



TF antigen imaging: Kumar and colleagues synthesize and evaluate the properties of a ^{64}Cu -radiolabeled Thomsen-Friedenreich antigen-specific peptide derived from bacteriophage display for human breast tumor targeting and PET imaging in xenografted mice. **Page 1819**



Radiation damage after micro-CT: Kersemans and colleagues elucidate relationships among radiation dose, biologic damage, and image quality to determine whether CT can be used without significantly compromising radiotherapy and tumor development studies. **Page 1827**

ON THE COVER

Cerenkov luminescence imaging is an emerging technique that combines aspects of both optical and nuclear imaging. An antitumor study in this issue of *JNM* has confirmed the dynamic sensitivity of this new modality and its correlation with PET findings. The technique provides a preclinical alternative to expensive PET instrumentation that should allow for higher cost-to-return benefits in the drug discovery process.

See page 1767.

