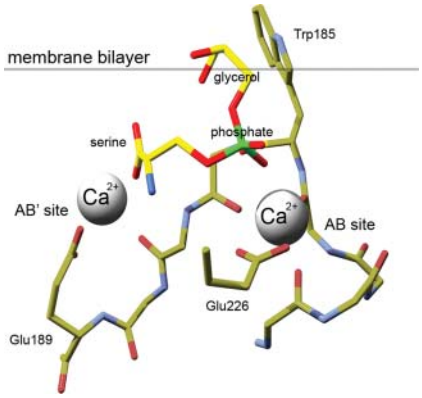
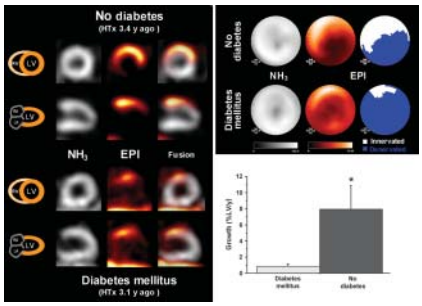
Nuclear medicine and CTA: Di Carli reviews the current status of CT angiography in the diagnosis and management of coronary artery disease and calls for evidence-based studies to advance the technique and explore new applications. . . . . ***Page 1397***

Monitoring molecular change: Eisenhut and Haberkorn describe the role of radiolabeled annexin as an in vivo imaging indicator of apoptosis in cancer treatment and emphasize the importance of molecular structure in site-specific labeling. . . . ***Page 1400***



Thyroid stunning controversy: Woolfenden summarizes evidence for and against the contention that radiation effects from ^{131}I diagnostic doses may impair the ability of remnant tissue or metastases to concentrate iodine during subsequent therapy. . . . . ***Page 1403***

A new look at stunning: Sisson and colleagues question conventional concepts about the cause of thyroid tissue stunning, pointing to the early destructive effects of therapeutic ^{131}I rather than the results of diagnostic imaging. . . . . ***Page 1406***



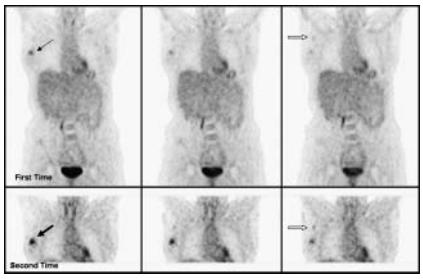
Diabetes and the transplanted heart: Bengel and colleagues use molecular-targeted PET to investigate the effect of diabetes mellitus on the regenerational capacity of sympathetic neurons in cardiac transplant recipients. . . . . ***Page 1413***

Evaluating coronary vasomotor function: Siegrist and colleagues study the repeatability of endothelium-related myocardial blood flow responses to cold pressor testing as assessed by PET in groups of tobacco smokers and nonsmokers. . . . . ***Page 1420***

Exploring the blood–brain barrier: Takano and colleagues apply ^{11}C-verapamil PET to the characterization of P-glycoprotein functional differences at the blood–brain barrier in individuals with different polymorphisms of the MDR1 gene and outline implications for future studies. . . . . ***Page 1427***

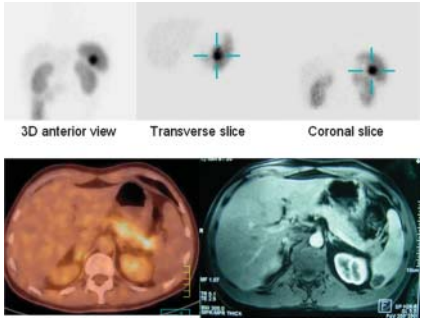
Angiogenesis imaging in breast cancer: Bach-Gansmo and colleagues describe a proof-of-concept efficacy and safety study of a novel technetium-labeled agent for breast cancer scintigraphy. . . ***Page 1434***

Imaging breast cancer with ^{18}F-FDG: Mavi and colleagues assess the utility of ^{18}F-FDG PET dual-time-point techniques in detecting primary breast tumors and investigate the relationship between tracer uptake changes over time and histopathologic subtypes. . . . . ***Page 1440***



PET in advanced NPC: Chan and colleagues compare whole-body ^{18}F-FDG PET and conventional work-up in monitoring response after primary curative therapy for locoregional advanced nasopharyngeal carcinoma and look at the effects of PET findings on subsequent patient management. . . . . ***Page 1447***

PET vs. SSR scintigraphy: Montravers and colleagues study the efficacy of ^{18}F-FDOPA PET in the diagnosis and follow-up of different types of well-differentiated digestive endocrine tumors and compare the performance of PET with that of ^{111}In-pentetreotide somatostatin receptor scintigraphy. . . . . ***Page 1455***



One-take cholecystitis assessment: Krishnamurthy and Krishnamurthy analyze the effects of opioid intake on scintigraphy of gallbladder response to cholecystokinin-8 and discuss the role of this approach in evaluating acute and chronic cholecystitis in a single hepatobiliary study. ***Page 1463***

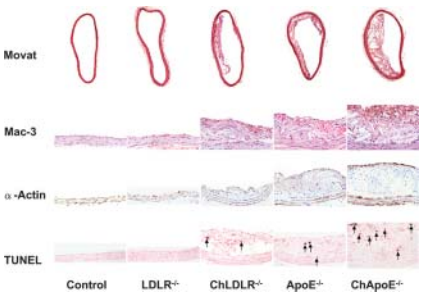
Refining peptide receptor therapy: Cremonesi and colleagues review published reports of peptide receptor radionuclide therapy

dosimetry, including radiopharmaceutical characteristics, data processing, dosimetric outcomes, and methods to protect critical organs, and describe a model for determining biological effective dose. . . . . ***Page 1467***

Tailored protocols with promise: Dimitrios and colleagues provide dosimetric data on intrahepatic ^{111}In-DTPA-D-Phe^{1}-octreotide therapy for neuroendocrine tumors with overexpression of somatostatin receptors and recommend a patient-specific dosimetric protocol to optimize planning and efficacy. . . . . ***Page 1476***

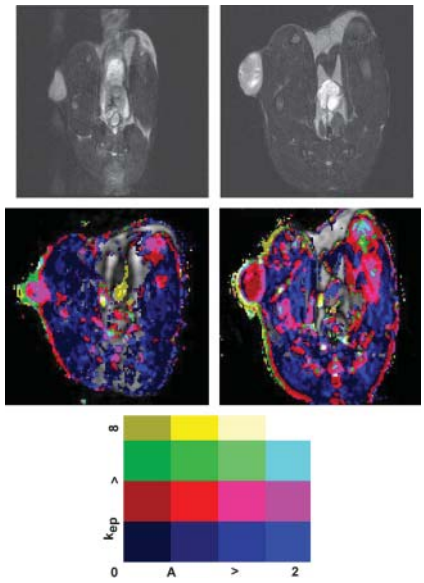
Delivery of adenoviral vectors: ter Horst and colleagues evaluate whether a convection-enhanced approach improves intratumoral delivery of adenoviral vectors in malignant gliomas and compare this with single- and multiple-injection strategies. . . . ***Page 1483***

Imaging cardiac denervation: Raffel and colleagues characterize the dependence of retention of the norepinephrine analog HED on nerve density in rats with graded levels of chemically induced cardiac denervation and discuss potential applications for ^{11}C-HED PET imaging in humans. . . . . ***Page 1490***

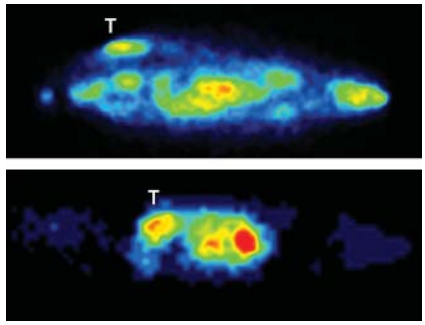


SPECT/CT and atherosclerosis: Isobe and colleagues evaluate radiolabeled annexin SPECT/CT imaging in transgenic mouse models of human atherosclerosis to characterize lesions and explore the effects of a high fat/cholesterol diet on imaging parameters. . . . . ***Page 1497***

Antiangiogenic gene transfer therapy: Schmidt and colleagues investigate the effects of TnI gene transfer on endothelial cell apoptosis/proliferation in vitro and on hepatoma growth, perfusion, vascularization, apoptosis/proliferation, and gene expression in vivo. . . . . ***Page 1506***



Monitoring angiogenesis strategies: Kunz and colleagues examine the complex cellular and molecular effects of angiopoietin-2 gene transfer in a rat hepatoma model. ***Page 1515***



p53 and tracer uptake: Smith and colleagues investigate the relationship between high ^{18}F-FDG uptake in breast cancer and decreased expression of wild-type p53 and discuss the implications of their findings for pretreatment PET imaging in patients with breast cancer. . . . . ***Page 1525***

Characterizing ^{11}C-verapamil transfer: Ikoma and colleagues validate the quantification methods for ^{11}C-verapamil transfer from plasma to the brain in healthy humans in a companion study to that by Takano and colleagues appearing in this issue of *JNM*. . . . . ***Page 1531***

Chemotherapy and tracer uptake: van Waarde and colleagues explore the effects of 3 cytotoxic agents on early changes in uptake of 6 PET tracers in cultured glioma cells and describe potential predictors of therapeutic response. . . . . ***Page 1538***

Improved detection of cell death: Tait and colleagues challenge the notion that annexin V molecules derivatized by amine-directed bifunctional agents retain full bioactivity and discuss the implications for site-specific labeling methods in detecting apoptosis. . . . . ***Page 1546***

ON THE COVER

Human troponin I efficiently inhibits tumor growth by decreasing vascularization. Dynamic PET measurements with $H_2{}^{15}O$ were performed to test for differences in tissue perfusion between troponin I–expressing (bottom) and wild-type (top) Morris hepatomas. Pharmacokinetic analysis of the PET data revealed that tumor perfusion was less in troponin I tumors than in wild-type tumors. The ability to measure the decreased perfusion resulting from a decrease in vascularization makes PET a promising method for the monitoring of antiangiogenic gene therapy.

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