

Clinical translation of diagnostic drugs:

Josephson and Rudin provide an overview of optimal approaches to address the challenges of cost and time in development of radioactive imaging agents, particularly for small target populations. **Page 329**

PET/CT and endocrine resistance:

Cheng and colleagues explore the question of whether ¹⁸F-FMISO PET/CT can predict primary resistance to hormonal therapy in estrogen receptor-positive breast cancer. **Page 333**

Sequential PET in breast cancer:

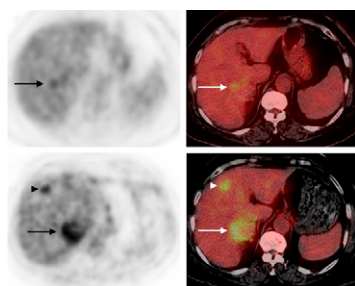
Hatt and colleagues determine the best image-derived parameters extracted from sequential ¹⁸F-FDG PET scans for early tumor response prediction after 2 cycles of neoadjuvant chemotherapy in breast cancer. **Page 341**

PET imaging of σ -receptors:

Dehdashti and colleagues evaluate the safety and dosimetry of a novel cellular proliferative marker and, in a first-in-human study, assess the feasibility of its use in PET imaging of tumor proliferation in newly diagnosed malignant neoplasms. **Page 350**

Delayed PET in alveolar echinococcosis:

Caoduro and colleagues investigate the usefulness of delayed ¹⁸F-FDG PET imaging in the management of patients with this rare and chronic parasitic disease. **Page 358**



⁶⁸Ga-DOTANOC vs. ⁶⁸Ga-DOTATATE

PET/CT: Wild and colleagues compare both somatostatin receptor imaging

approaches in a single group of patients with gastroenteropancreatic neuroendocrine tumors. **Page 364**

Ultra low dose cardiac SPECT:

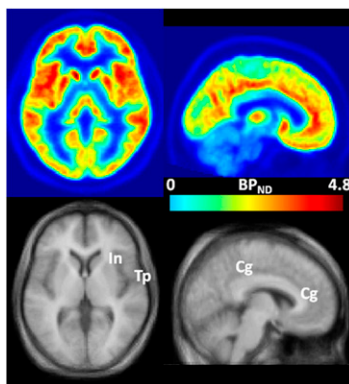
Nakazato and colleagues assess the feasibility of very low dose myocardial perfusion imaging by exploring the minimal count level in the myocardium required for accurate results. **Page 373**

PSMA-binding small molecules:

Barrett and colleagues report on the pharmacokinetics of novel ¹²³I-labeled small molecules targeting prostate-specific membrane antigen and on their ability to visualize prostate cancer in human bone, soft tissue, and the prostate gland. **Page 380**

PET and mGluR5:

Wong and colleagues present the results of a first-in-human study assessing the safety and effectiveness of ¹⁸F-FPEB, a novel PET radiopharmaceutical for quantifying regional brain concentrations of metabotropic glutamate receptor type 5. **Page 388**



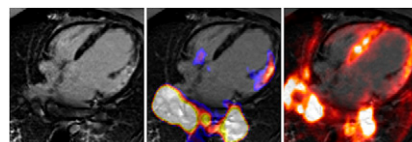
Initial clinical study with ¹²⁴I-F16SIP:

Heuveling and colleagues describe the results of a microdosing phase 0 clinical study of pharmacokinetics, biodistribution, and specific tumor targeting with this radiolabeled anti-tenascin-C mini antibody **Page 397**

Cardiac PET/MR:

Rischpler et al. offer a comparative summary of existing applications

of PET and MR in cardiology and suggest potential cardiac applications using the unique properties of the hybrid instrumentation. **Page 402**

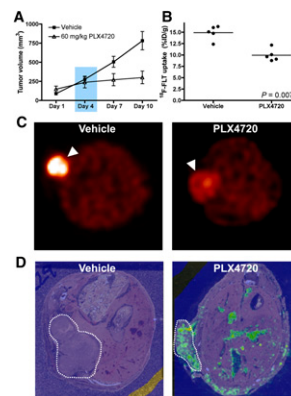


EGFR-directed RIT:

Saker and colleagues analyze the efficacy of ⁹⁰Y-labeled cetuximab radioimmunotherapy in head and neck squamous cell carcinoma cell lines and look at the most desirable DNA effects in epidermal growth factor receptor-targeted therapy. **Page 416**

PET and BRAF therapy response:

McKinley and colleagues explore the utility of ¹⁸F-FLT PET in noninvasive quantification of changes in tumor proliferation associated with pharmacologic inhibition of downstream effectors of the most frequently mutated protein kinase in human cancer. **Page 424**



Methionine uptake in acute MI:

Taki and colleagues research serial changes in and mechanisms of ¹⁴C-methionine uptake in a rat model of myocardial ischemia and reperfusion and discuss implications for imaging of inflammation early after myocardial infarction. **Page 431**

Verapamil transport across BBB and BPB: Ke and colleagues use compartmental modeling to analyze dynamic biodistribution data on transport of the P-glycoprotein PET ligand ^{11}C -verapamil across the blood–brain and blood–placenta barriers. *Page 437*

^{18}F -FDG–labeled MSCs and MAPCs: Wolfs and colleagues detail an optimized approach to radiolabeling of mesenchymal stem cells and multipotent adult progenitor cells in vitro and investigate potential radiotoxic effects. *Page 447*

KOR antagonist and PET: Zheng and colleagues synthesize ^{11}C -LY2795050, a selective κ -opioid receptor antagonist, and evaluate its potential as a PET tracer for imaging receptor involvement in neuropsychiatric and addictive disorders. *Page 455*

MR-based PET motion correction: Würslin and colleagues report on phantom and patient studies of the applicability and performance of an MR-based method of respiratory motion correction for PET tumor imaging. *Page 464*

USP monographs and PET drugs: Schwarz and colleagues describe the history of USP monographs and PET drug standards, the effects of potential changes, and new SNMMI recommendations for the future. *Page 472*

Appropriate use criteria for amyloid PET: Johnson and members of the Alzheimer’s Association and SNMMI Amyloid Imaging Taskforce provide a consensus expert opinion on both appropriate and inappropriate uses for PET imaging of brain amyloid- β *Page 476*

ON THE COVER

Two novel ^{123}I -labeled small molecules targeting prostate-specific membrane antigen have shown potential for visualizing prostate cancer on SPECT/CT, as shown by these images 4 h after injection.

See page 380.

