

Click chemistry and radioscience: Zeng and colleagues provide a brief history and overview of the growing importance of bioorthogonal click chemistry in the development of radiopharmaceuticals, focusing on advantages in modularity, reliability, selectivity, and efficiency. *Page 829*

¹⁸F-FCH in recurrent prostate cancer: Beheshti and colleagues assess the diagnostic accuracy of this agent in PET/CT detection of recurrent disease or distant metastases and correlate results with prostate-specific antigen levels and histories of androgen deprivation therapy. *Page 833*

PET/CT in head and neck cancer: Sharma and colleagues describe the role of ⁶⁸Ga-labeled DOTANOC PET/CT for baseline evaluation of patients with head and neck paragangliomas and compare results with those from ¹³¹I-MIBG scintigraphy and CT/MR imaging. *Page 841*

Early PET for HCC hyperperfusion: Schierz and colleagues detail and pilot a simplified protocol for early dynamic ¹⁸F-FDG PET/CT evaluation of hepatocellular carcinoma liver nodule hypervascularization. *Page 848*

⁶⁸Ga-DOTATATE dosimetry: Walker and colleagues report on measured human dosimetry of the ⁶⁸Ga-labeled synthetic somatostatin analog ⁶⁸Ga-DOTATATE, an investigational PET/CT imaging agent that binds with high affinity to somatostatin receptor subtype 2. *Page 855*

¹⁸F-FSPG dosimetry: Smolarz and colleagues provide dosimetry estimates for this new glutamic acid-derivative PET tracer for detection of malignant diseases and discuss its promise in non-small cell lung cancer. *Page 861*

BAY86-7548 metabolism and dosimetry: Roivainen and colleagues offer the first-in-human study investigating the safety, tolerability, metabolism, pharmacokinetics, biodistribution, and radiation dosimetry of this ⁶⁸Ga-labeled bombesin antagonist for PET/CT imaging in prostate cancer. *Page 867*

Dynamic myocardial perfusion SPECT: Ben-Haim and colleagues assess the feasibility of dynamic tomographic SPECT imaging and quantification of a retention index to describe global and regional myocardial perfusion reserve using a dedicated solid-state cardiac camera. *Page 873*

¹¹C-PiB vs. ¹⁸F-AZD4694: Rowe and colleagues compare the cortical and white matter binding of ¹⁸F-AZD4694, a new amyloid- β tracer, with that of ¹¹C-Pittsburgh compound B in healthy elderly participants and individuals with varying levels of cognitive impairment. *Page 880*

Combined-tracer imaging in MCI: Albin and colleagues describe PET-based classification of neurodegenerative pathology in mild cognitive impairment with ¹¹C-dihydrotrabenazine PET assessment of striatal dopamine terminal integrity and ¹¹C-Pittsburgh compound B PET estimation of cerebral amyloid burden. *Page 887*

Metabolic networks and cognitive reserve: Morbelli and colleagues investigate the metabolic basis for resilience to neurodegeneration and for neural compensation in highly educated patients with prodromal Alzheimer disease. *Page 894*

PET proliferation imaging: Tehrani and Shields provide an educational overview of tumor proliferation with labeled pyrimidine analogs, with a focus on ¹⁸F-fluorothymidine and early assessment of treatment response. *Page 903*

Anti-EGFR RIT in breast cancer: Al-Ejeh and colleagues employ epidermal growth factor receptor as a target for radioimmunotherapy in a mouse model of triple-negative breast cancer. *Page 913*

Prostate tumor redox status: Keshari and colleagues describe development of a hyperpolarized, oxidized form of vitamin C as an MR probe and assess its performance and that of ¹⁸F-FDG PET in a model of transgenic adenocarcinoma of the mouse prostate. *Page 922*

⁸⁹Zr-RO5323441 PIGF PET: Oude Munnink and colleagues describe radiolabeling and preclinical validation of this humanized monoclonal antibody against placental growth factor, a member of the proangiogenic vascular endothelial growth factor family upregulated in many tumors. *Page 929*

PET and afatinib treatment: Janjigian and colleagues evaluate the ability of ⁸⁹Zr-trastuzumab PET to identify HER2-positive gastric cancer and to monitor the pharmacodynamic effects of afatinib, an epidermal growth factor receptor/human epidermal growth factor receptor 2 tyrosine kinase inhibitor. *Page 936*

Bone metastasis characterization: Doré-Savard and colleagues report on longitudinal monitoring of bone tumor progression using small animal PET/MR image coregistration to improve noninvasive imaging-assisted diagnoses. *Page 944*

Disulfiram and copper cytotoxicity: Rae and colleagues determine through in vitro and in vivo studies the potential of disulfiram to enhance the antitumor efficacy of external-beam γ -irradiation and ¹³¹I-MIBG in neuroendocrine tumors. *Page 953*

Novel targeting therapeutic Affibody: Orlova and colleagues detail the design and evaluation of ¹⁷⁷Lu-ABY-027, a new targeting Affibody-albumin-binding domain fusion protein with improved biodistribution properties for radionuclide therapy. *Page 961*

Awake small-animal neuroimaging: Baba and colleagues describe development of and initial studies with a SPECT imaging system that enables molecular brain imaging of untrained, conscious, unanesthetized, and unrestrained mice. *Page 969*

Apoptosis imaging of engrafted MSCs: Godier-Furnémont and colleagues use dual-tracer ^{99m}Tc-HYNIC annexin V and ²⁰¹Tl SPECT/CT imaging to assess the cardioprotective effects of a conditioned mesenchymal stem cell patch in a rat model of acute myocardial infarction. *Page 977*

Reporter genes and MCAO models: Wu and colleagues explore the feasibility of and methods for imaging bone marrow stem cells with a novel reporter gene-probe system in experimental middle cerebral artery occlusion rat models. *Page 984*

Gene regulation at low-dose ²¹¹At: Langen and colleagues elucidate the effect of α -particle exposure from administration of ²¹¹At on transcriptional gene regulation in normal animal tissues in the kidney cortex and medulla, liver, lungs, and spleen. *Page 990*

¹⁸F-FDG and USPIO in atherosclerosis: Satomi and colleagues investigate intracellular ¹⁸F-FDG and ultrasmall superparamagnetic iron oxide particle accumulation in differently polarized macrophages. *Page 999*