

Article Title: Dosimetry of ^{18}F -Labeled Tyrosine Kinase Inhibitor SKI-249380, a Dasatinib-Tracer for PET Imaging

Journal Name: Molecular Imaging and Biology

Authors: Mark P.S. Dunphy*, Pat Zanzonico, Darren Veach, Romel Somwar, Nagavarakishore Pillarsetty, Jason Lewis Steven Larson

* **Correspondence:** Memorial Sloan Kettering Cancer Center, 1275 York Avenue, Box 77, Room H-214B, New York, New York 10065. E-mail: dunphym@mskcc.org, Telephone: 1-212-639-8131, Fax: 1-212-717-3263 .

Online Resource 1. PET Image Units Calibration to %ID

Positron emission tomography (PET) tracer biodistribution data was calibrated to units of percentage of the injected dose (%ID) for analytical derivation of organ time integrated activity coefficients (in main article, see *Methods: Organ Time Integrated Activity Coefficients*). Data were sorted into sinograms by Fourier re-binning and PET images were reconstructed by iterative algorithm (default manufacturer settings) without attenuation correction. Counts, in the image data file, were converted to units of %ID by adjusting the calibration factor in the study-specific image header file referenced by the image file. An adjusted image calibration factor was calculated for each study. First, a system calibration factor that determined the relationship between counts detected (data in arbitrary units, AU) and activity present (MBq) was calculated for each PET camera, using an ^{18}F -filled mouse-sized phantom, expressed as MBq/AU. The study-specific image calibration factor was calculated as the known injected dose (MBq) divided by the system calibration factor, expressed as %ID/AU (MBq/MBq•AU). Visualization and

analyses of PET data were carried out using AsiPRO™ software (Siemens Preclinical Solutions, Knoxville, TN). AsiPRO™ software reported the activity (%ID and %ID/mL) present in a selected digital region-of-interest (ROI), multiplying the image calibration factor (%ID/AU), from the referenced header file, by the emission count data (AU) in the ROI. AsiPRO™ automatically corrected time-dependent activity measurements for radioactive decay from the time of the start of the emission scan.