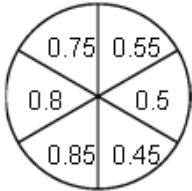




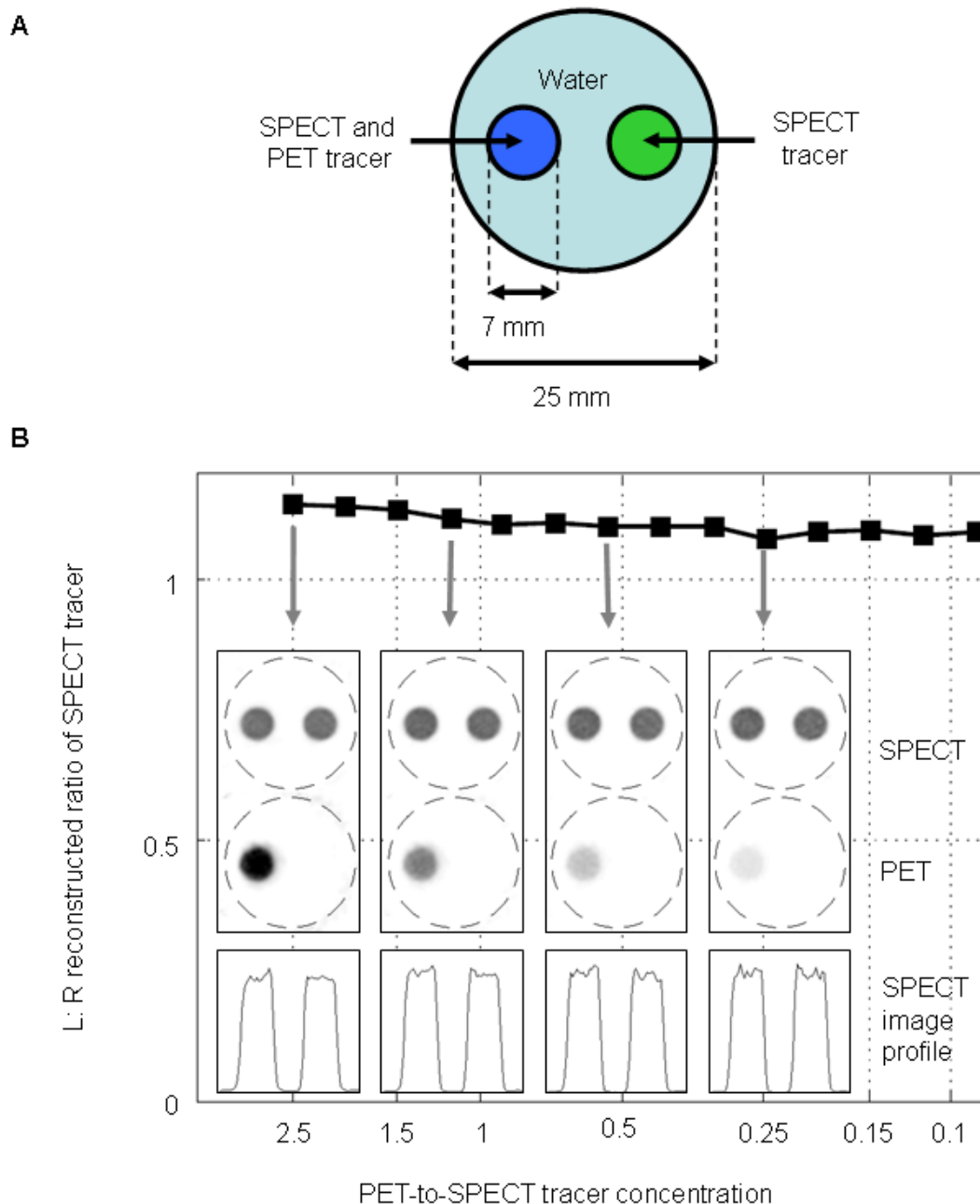
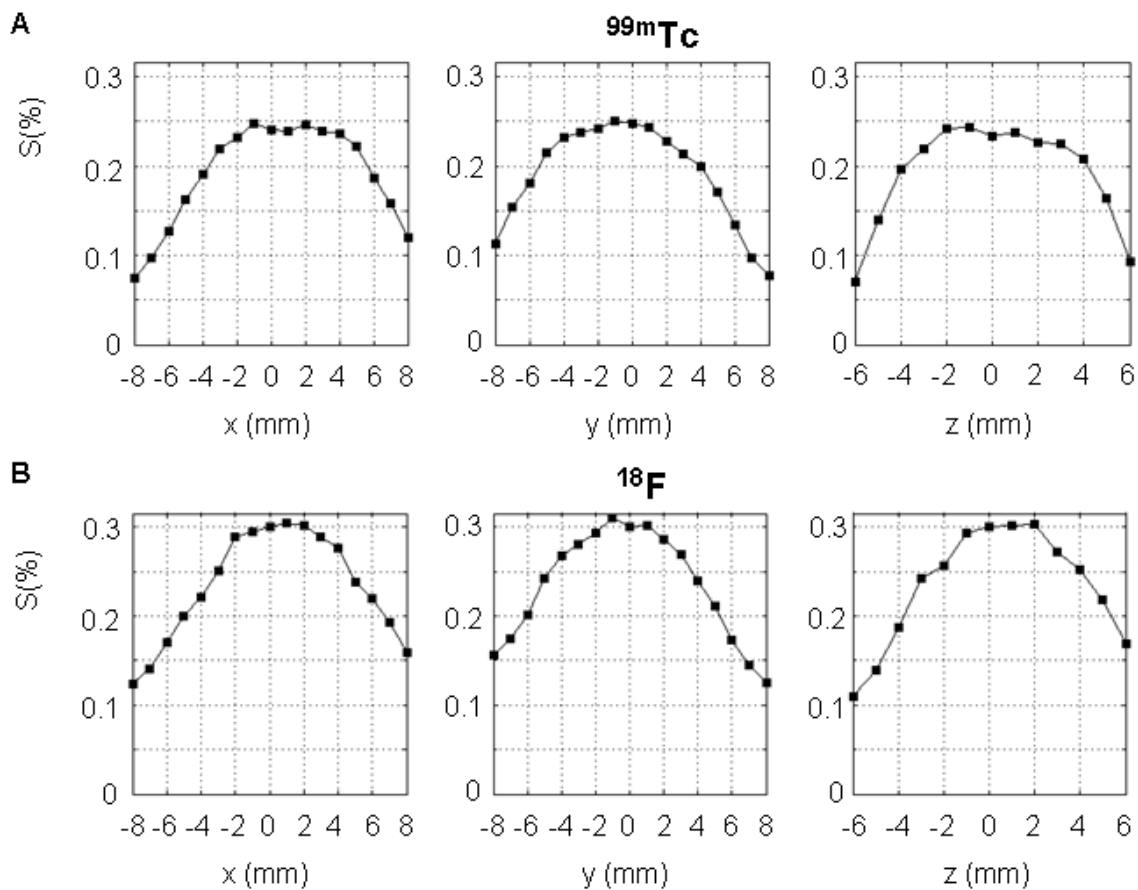


| Rod sizes (mm)  | <sup>99m</sup> Tc images  |   |  |   |
|---|---|---|--|---|
|  |  |  |  |  |
| PET-to-SPECT tracer concentration ratio   | 2.86  | 1.30  | 0.59   | 0.27  |

**SUPPLEMENTAL FIGURE 1.** SPECT images of a Jaszczak resolution phantom filled with a mix of SPECT and PET tracer at different PET-to-SPECT concentration ratios. The phantom with capillary diameters of 0.85, 0.8, 0.75, 0.55, 0.5 and 0.45 mm was filled with 29.8 MBq <sup>18</sup>F solution and 10.4 MBq <sup>99m</sup>Tc solution and imaged for 60 minutes at t=0, t=3, 6, and 9 hours. PET-to-SPECT concentration ratios at the start of each scan are provided below each image. Slice thickness was 3.2 mm.



**SUPPLEMENTAL FIGURE 2.** Experiment to quantify the influence of a PET tracer on SPECT images. (A) Phantom containing two smaller cylindrical compartments, one filled with a mix of a SPECT and a PET tracer (approx. 20 MBq  $^{99m}\text{Tc}$  and 50 MBq  $^{18}\text{F}$ ), the other filled with a SPECT tracer (approx. 19 MBq  $^{99m}\text{Tc}$ ), placed in a large mouse-sized cylindrical area filled with water. (B) Ratio of reconstructed SPECT activities in the left (L) and right (R) compartment for scans at different time points ( $t=0, 1, 2 \dots 14$  hours) as a function of PET-to-SPECT tracer concentration ratio in the left cylinder at the start of each scan. For several scans, reconstructed SPECT and PET images are shown (slice thickness 4 mm), all plotted on the same gray-scale and decay-corrected for SPECT tracer decay. To guide the eye, the border of the water-filled region is also indicated in these images. Profiles through the center of the SPECT images are shown as well.



**SUPPLEMENTAL FIGURE 3.** Measured sensitivity for small  $^{99m}\text{Tc}$  (top) and  $^{18}\text{F}$  (bottom) sources, along the x-axis, the y-axis and z-axis of the system, expressed in %. The z-axis is the axis of the cylindrical collimator. These results are for a photopeak window with a width of 30%.