

Supplemental figure 1. Derenzo phantom images obtained with the mouse collimators reconstructed with 3DOSEM and 3DMAP with a prior of 10 (8 iterations, 5 subsets).



Supplemental figure 2. Image Quality phantom transverse sections obtained with the mouse collimators (A, B and C) and the rat collimators (D, E and F) reconstructed with 3DOSEM (8 iterations, 5 subsets).



Supplemental figure 3. (A), (B) and (C) are the recovery coefficients measured at convergence from the 3DOSEM images and the 3DMAP for different priors for the 1-MHR-0.5, the 5-MBR-0.5 and the 5-MWB-1 collimator sets, respectively. (D), (E) and (F) are the recovery coefficients measured at convergence from the 3DOSEM images and the 3DMAP for different priors for the 1-RGP-1.5, the 3-RWB-1.2 and the 3-RWB-1.8 rat collimator sets, respectively.



Supplemental figure 4. (A-D) Projections obtained from the image quality phantom using the mouse single pinhole (A), the two mouse multi-pinholes (B) and (C) and the rat multi-pinhole with 1.2 mm aperture. (E-G) Images reconstructed from the data acquired with the 5-MWB-1 mouse multi-pinhole after 4 3DOSEM iterations (E), 100 3DOSEM iterations (F) and 100 3DMAP iterations using a prior strength of 1.0 (G).

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