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Supporting information for article:

Synchrotron inline phase contrast μ CT enables detailed virtual histology of embedded soft-tissue samples with and without staining

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Figure S1 Histological sections of mouse lung after PTA staining and imaging with SR μ CT:

Section of a paraffin embedded PTA stained and SR μ CT scanned mouse lung stained with H&E (A) displays that the characteristic alveolar structure as well as the morphology of bronchi and vessels of the lung has been conserved. Staining of the adjacent sections with an anti-CD31 antibody (B) visualize (dark brown color) the endothelial cells of the alveolar-capillary barrier of the lungs (black asterisk), and also of a small vessel (v), and (C) the MT staining reveals the connective tissue around the bronchi (b) and vessels (v) of the lung (blue color, black arrowhead). No staining artifacts can be seen in any of the three stainings, verifying that virtual histology based on SR μ CT does not interfere with classical histological analysis.

Figure S2 Phase retrieval of paraffin embedded PTA stained brain with various δ/β ratios

(A) Profile plots performed with various δ/β ratios (no-phase retrieval [0], 50, 100 and 200) through the cerebellum region (white rectangle, B) of the paraffin embedded PTA stained brain analyzed in Figure 4. The detail view of the plot (C) shows a representative positive edge enhancement which is still uncompensated at a δ/β ratio of 100, chosen for the analysis in Figure 4.