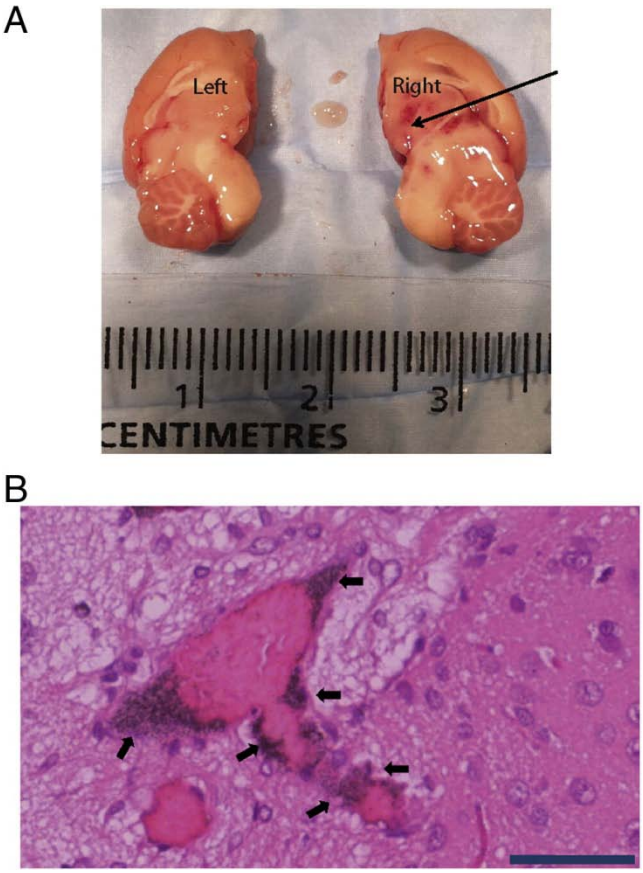

Figure 1. Gross pathology and histological (MRI) demonstration of BBB disruption by MRgFUS. (A) Gross pathology of the brain showing areas of extravasation (arrow) suggestive of BBB disruption within the right paramedian hemispheric surface that underwent MRgFUS. The left paramedian hemispheric surface appears normal – this hemisphere was not treated with MRgFUS. (B) Demonstration of AuNP extravasation (arrow) by silver enhancement and H&E histology within the right brain hemisphere (scale bar 50 μm).

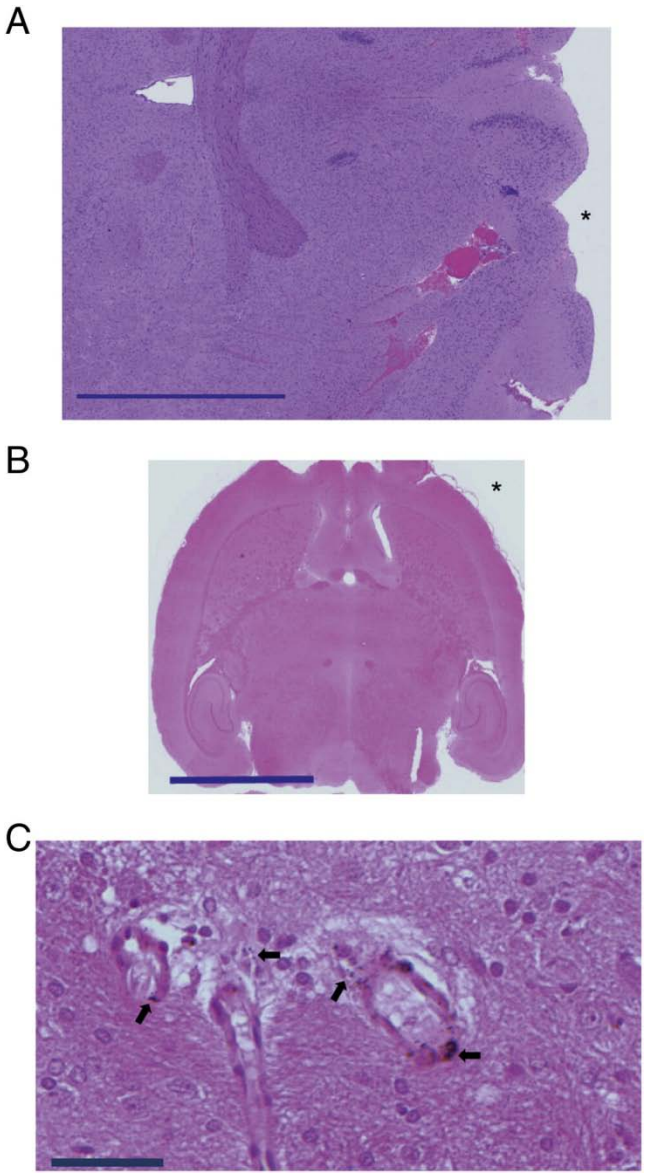

Figure 2. Brain histology in the subacute phase after BBB opening for delivery of AuNPs. (A) Resolving hemorrhage in the subcortical zone of the right frontal lobe (scale bar 2 mm, star marks right hemisphere). (B) Axial section at the level of the temporal lobes demonstrating normal brain structures (scale bar 5 mm, star marks right hemisphere). (C) AuNPs in the periventricular and parenchymal location (arrows) with no associated hemorrhage, necrosis, or inflammation (scale bar 50 μm).

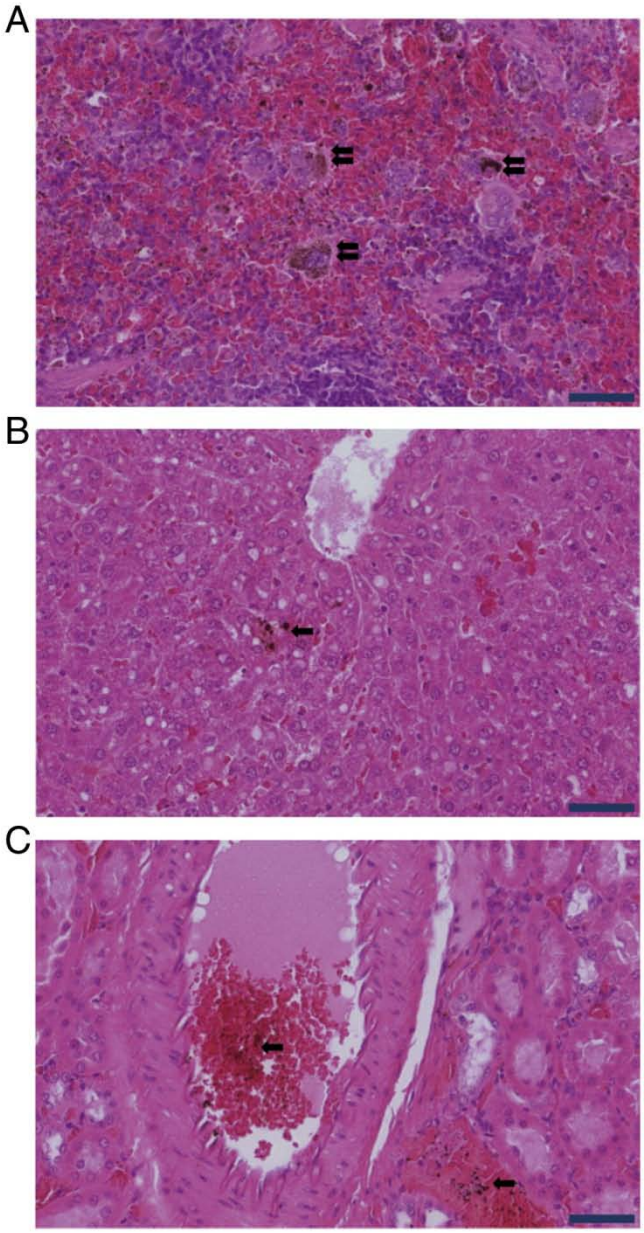

Figure 3. Spleen, liver and kidney histology following AuNP CNS delivery by MRgFUS.

(A) Demonstration of AuNPs by silver enhancement and H&E histology Etame et al. Enhanced delivery of gold nanoparticles with therapeutic potential into the brain using MRI–guided focused ultrasound. - 2 - within the spleen following MRgFUS. The AuNPs are shown (double arrows) within splenic macrophages (scale bar 50 μm). (B) Demonstration (arrow) of AuNPs by silver enhancement and H&E histology within the liver following

MRgFUS (scale bar 50 μm). (C) Demonstration (arrow) of AuNPs by silver enhancement and H&E histology within the kidney following MRgFUS (scale bar 50 μm).