

Supplementary materials

Physiological Remediation of Cobalt Ferrite Nanoparticles by Ferritin

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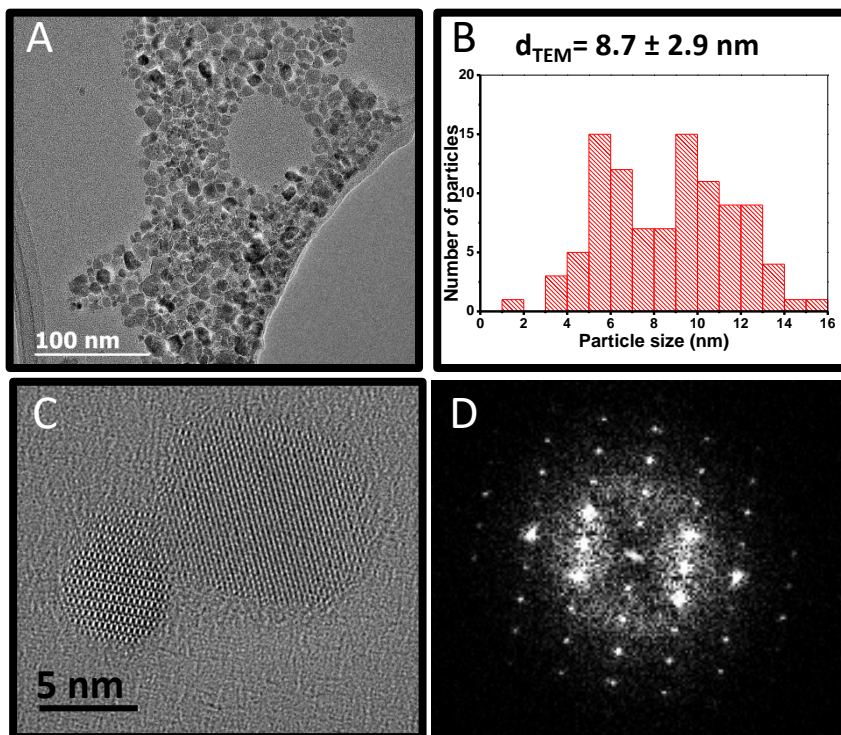


Figure S1: Characteristics of CoIONPs. A) TEM images of citrate-coated CoIONPs and B) corresponding TEM size distribution with a mean diameter of $(8.7 \pm 2.9$ nm). C) High resolution images of CoIONPs and D) FFT of selected particles show monocrystalline inverse spinel structure oriented along the [112] zone axes.

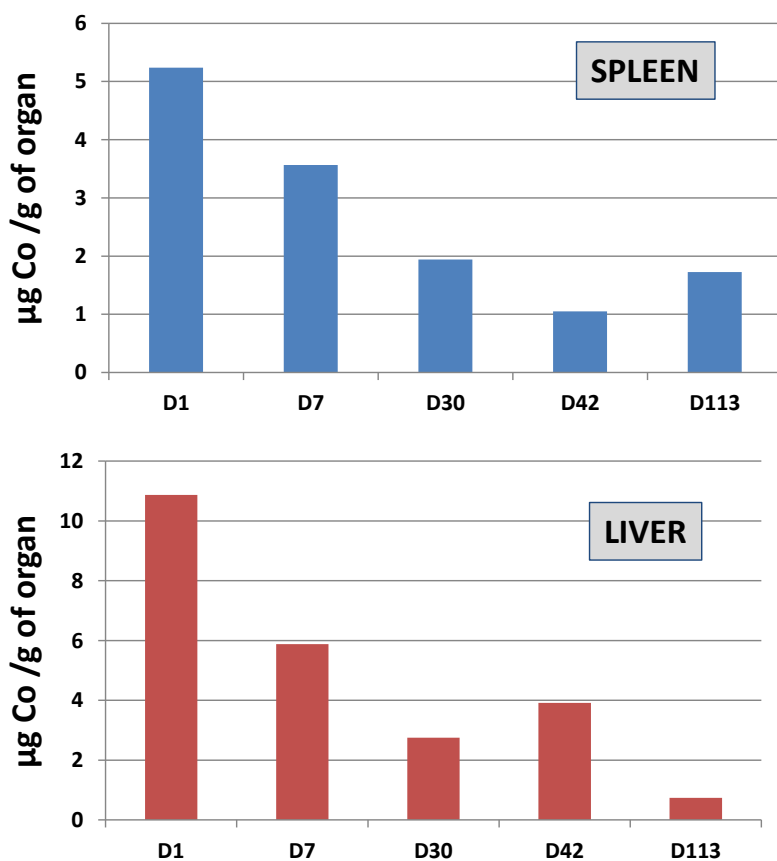


Figure S2: ICP-MS quantification of Co content in spleen and liver of mice injected with CoIONPs (50 μmol iron/kg body weight) at different time-points after injection indicated in days. The amount of Co is expressed as μg Co per g of fresh organ. Note the diminution over time of the cobalt content, but also the persistence in spleen of one third of the Co content at day 1, almost 4 months after injection.

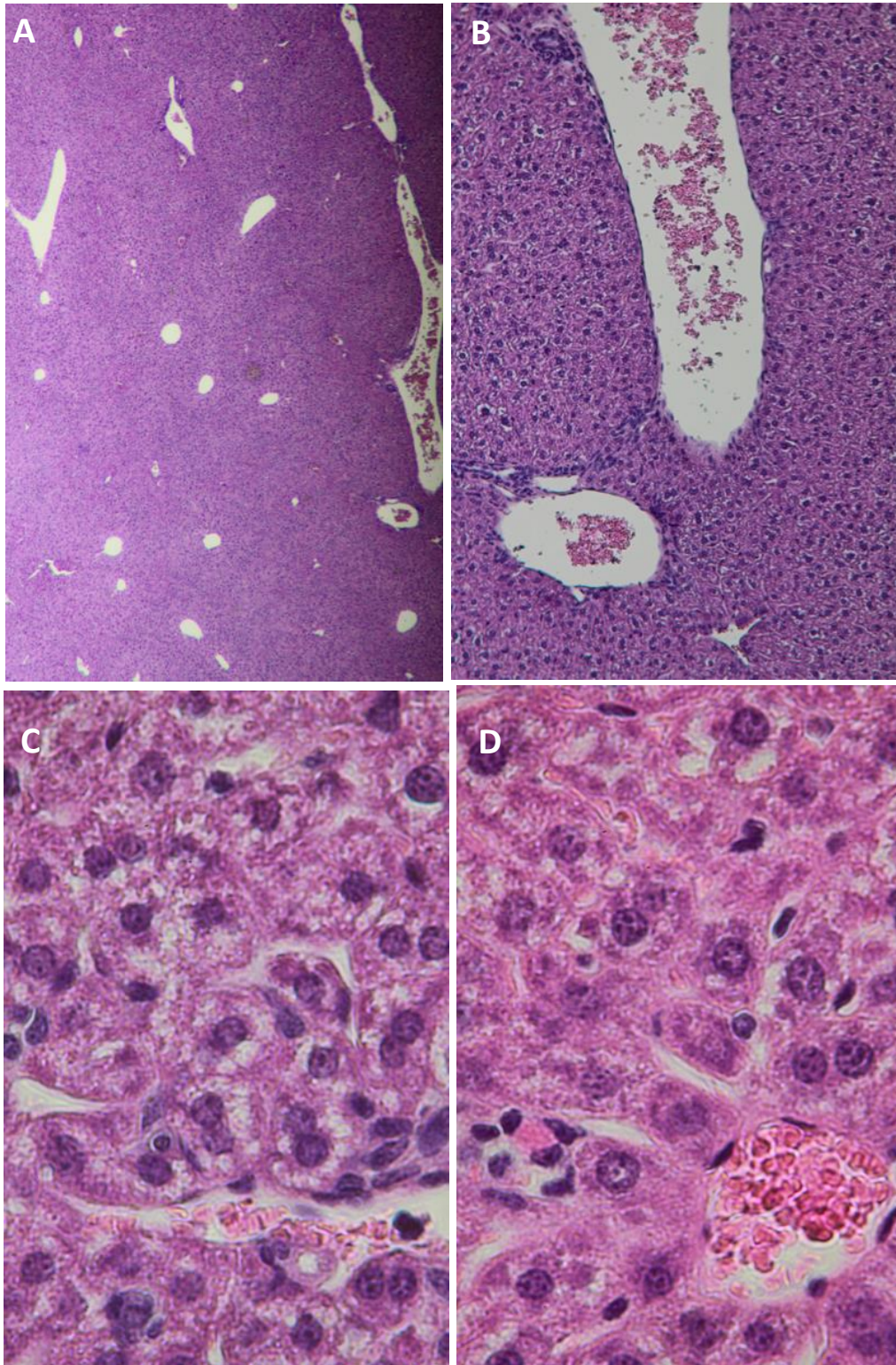


Figure S3: Histological staining (hematoxylin and eosin) of mouse liver at day 1 post-injection of nanoparticles (A, B, C) and in control non-injected mouse (D). Magnification are 2.5 (A), 10 (B) and 63 (C&D).

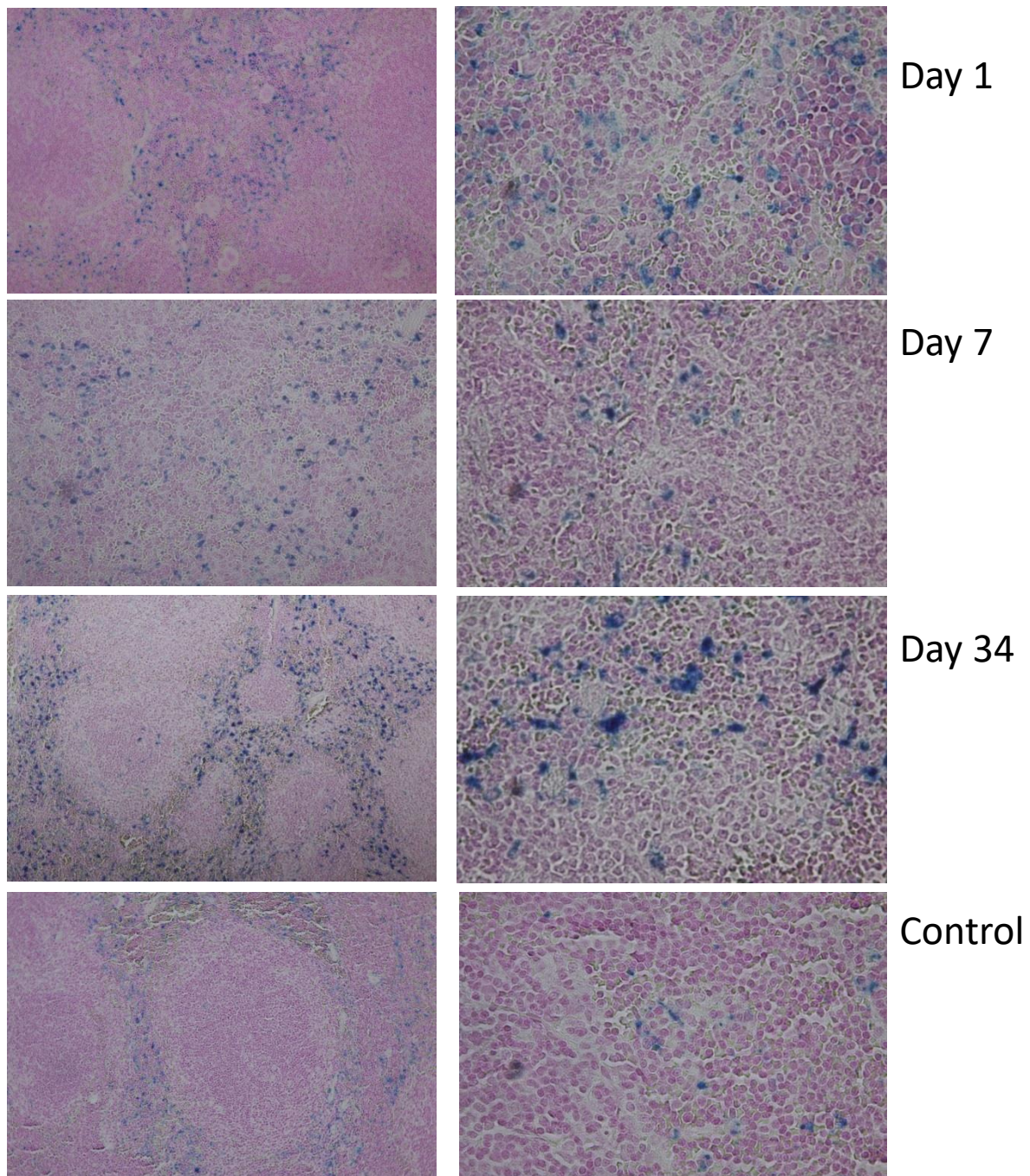


Figure S4: Histological staining (Pearls staining highlighting iron in blue) of mouse spleen at day 1, day 7 and day 34 post-injection of nanoparticles and in control non-injected mouse. Magnifications are x10 (left) and x20 (right).

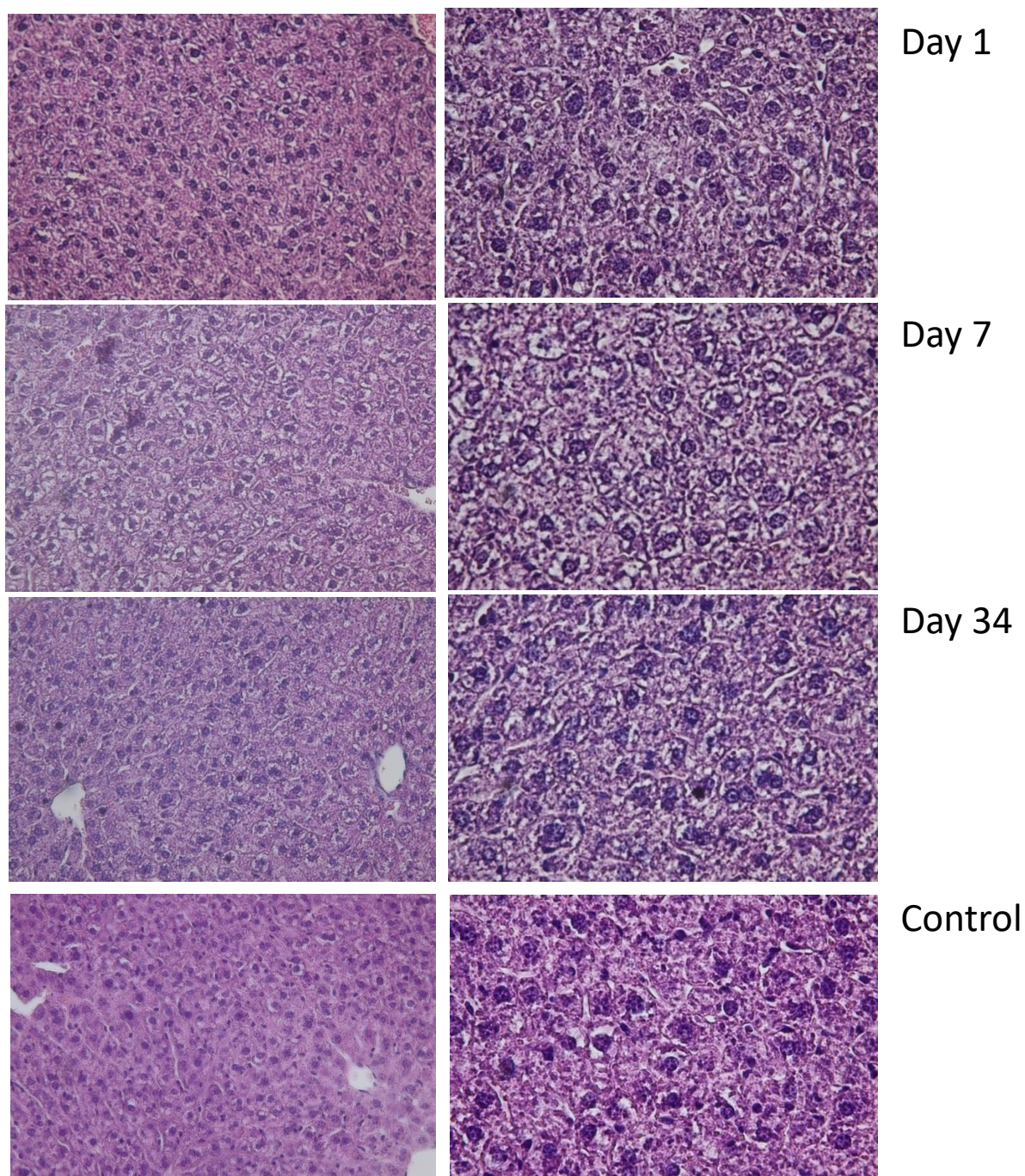


Figure S5: Histological staining (hematoxylin and eosin) of mouse liver at day 1, day 7 and day 34 post-injection of nanoparticles and in control non-injected mouse. Magnification are x20 (left) and x40 (right).

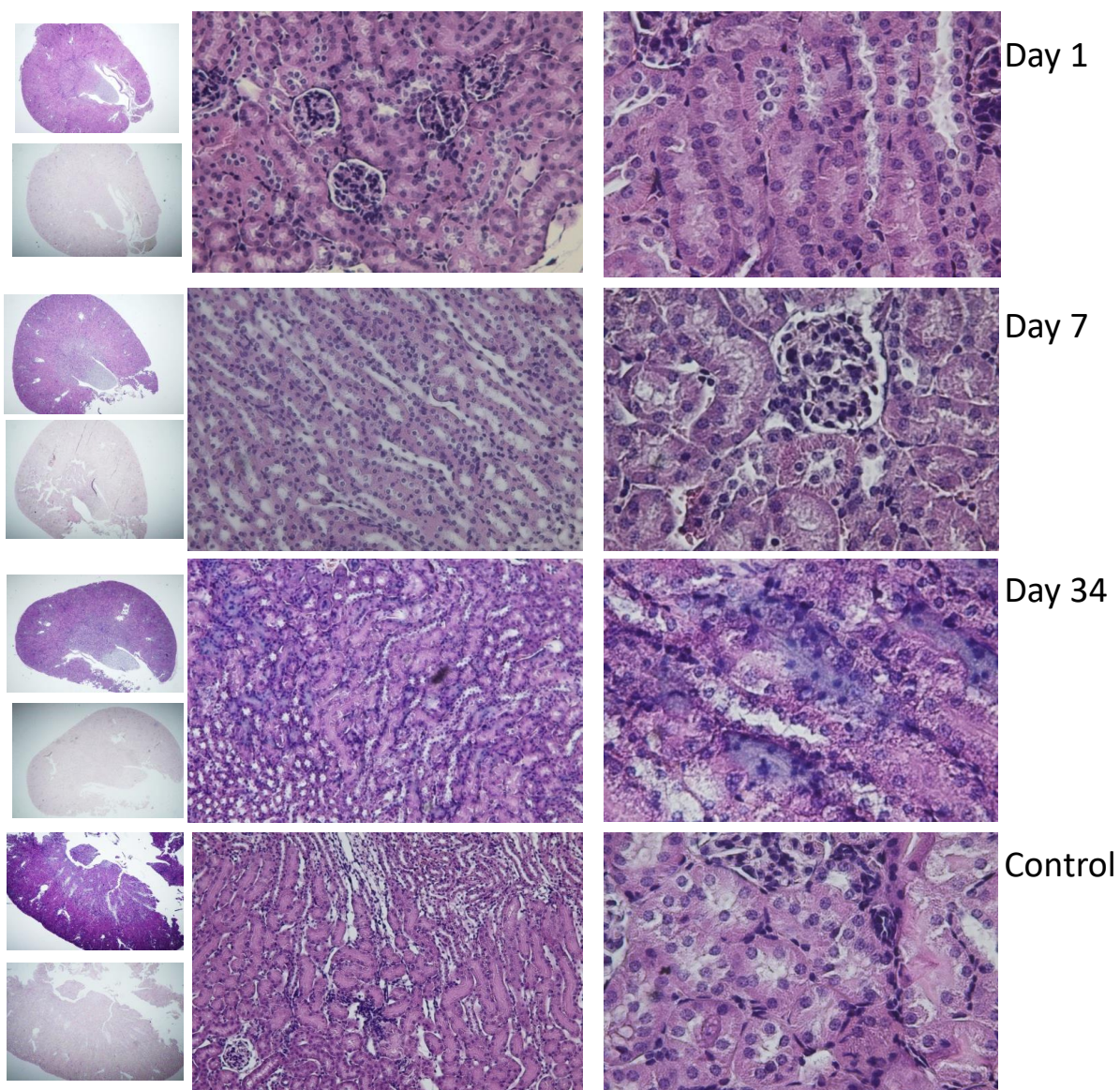


Figure S6: Histological staining (hematoxylin and eosin) of mouse kidney at day 1, day 7 and day 34 post-injection of nanoparticles and in control non-injected mouse. Magnification are x1.6 (left), x20 (middle) and x40 (right).

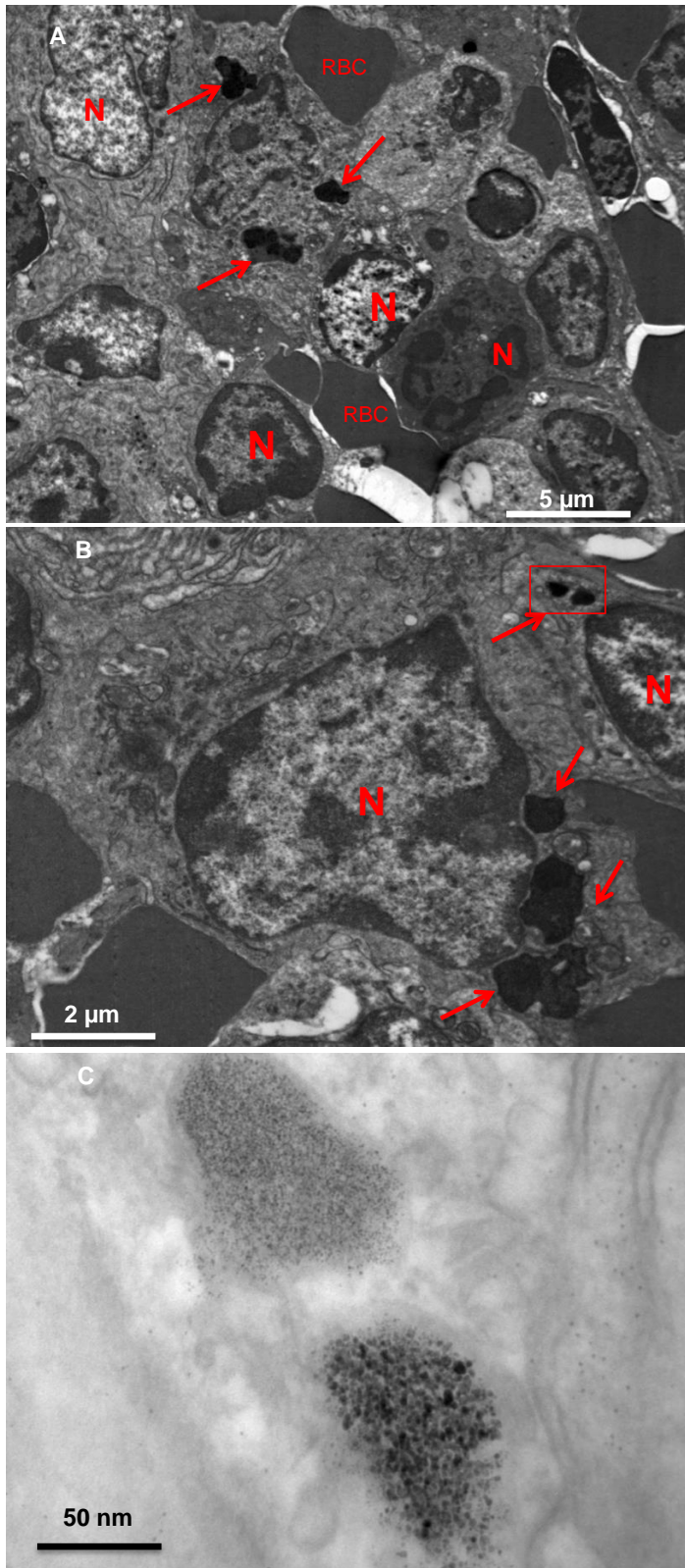


Figure S7: Electron microscopy general and magnified view of the spleen at D34 post injection. N=nucleus, arrow nanoparticle-rich zone, RBC = red blood cell. The red square in B is magnified in C and it reveals two families of nanoparticles that exhibit different sizes and electron density, probably pertaining to ferritins (upper) and cobalt ferrite nanoparticle remnants (lower group).