Structure and Functional Characteristics of Novel Polyurethane/Ferrite Nanocomposites with Antioxidant Properties and Improved Biocompatibility for Vascular Graft Development

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Supplementary material

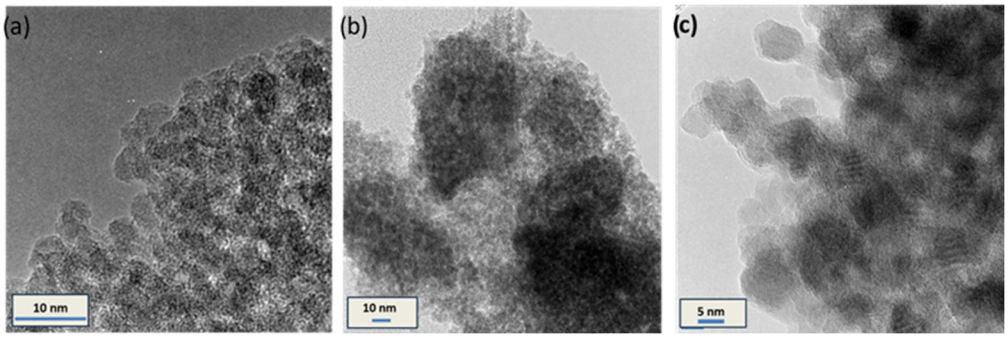

Figure S1. TEM micrograph of: a) CuFe2O4, b) ZnFe2O4 and c) Cu0.5Zn0.5Fe2O4 nanoparticles.

Particle size and shape were studied by transmission electron microscopy (TEM) using a 200 keV JEOL-2000 FXII microscope. TEM samples were prepared by placing one drop of a dilute suspension of nanopowder in acetone, previously sonicated for 30 minutes, on a carbon coated copper grid. The solvent was allowed to evaporate slowly at room temperature.

X-ray powder diffraction data (XRPD) were collected using a high-resolution Smart Lab® diffractometer (Rigaku, Japan), equipped with Cu Kα radiation source (λ = 1.5406 Å) under a voltage of 40 kV and a 30-mA current. The data collection for the patterns was performed in the 10-70° 2θ range.

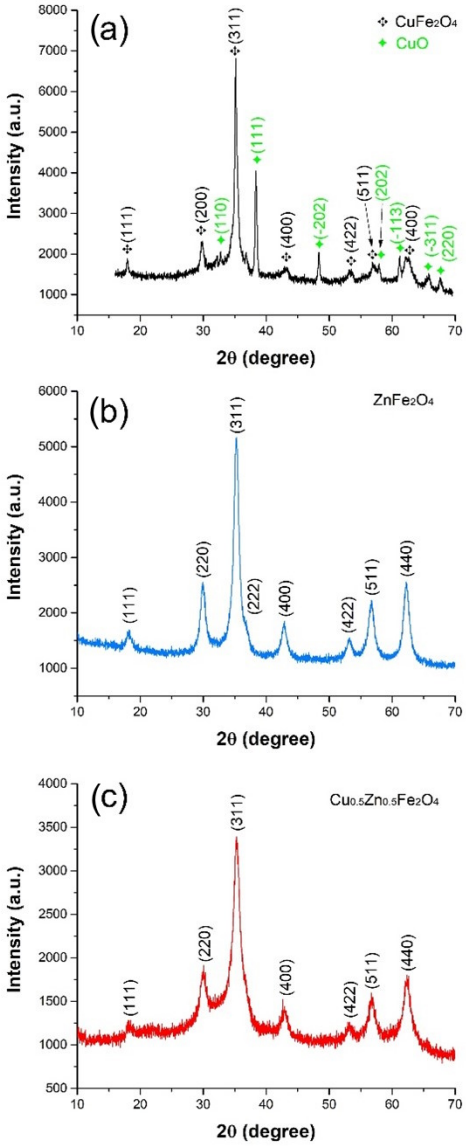

Figure S2. X-ray diffraction pattern of CuFe2O4, ZnFe2O4 and Cu0.5Zn0.5Fe2O4 nanoparticles.

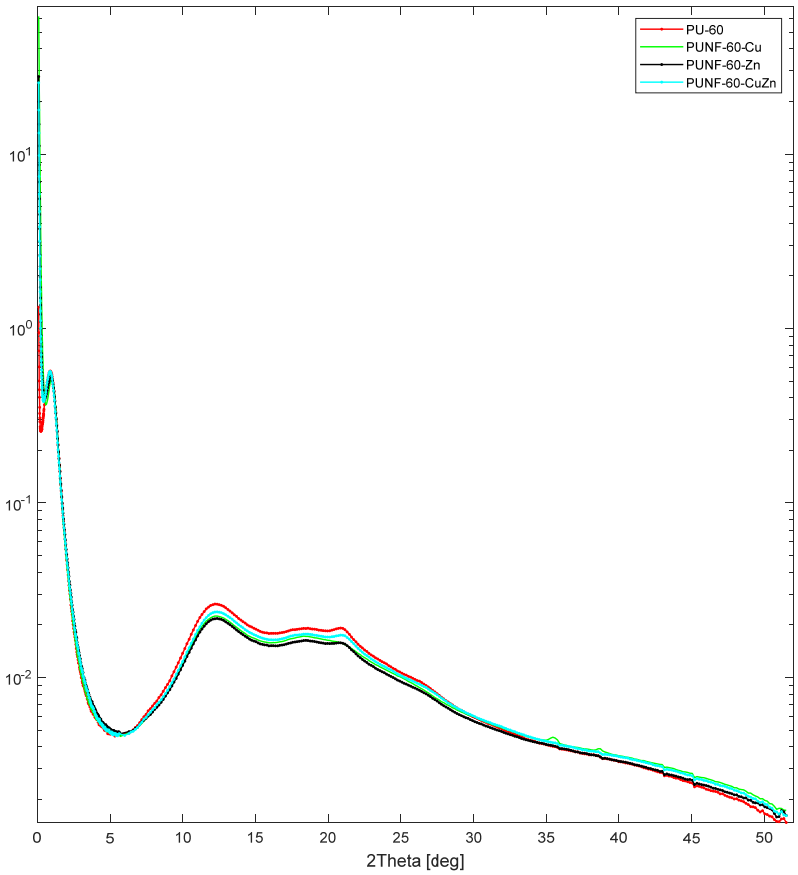

Figure S3. X-Ray scattering of the prepared PU/ferrite nanocomposites and pure PU films in the whole small-angle and near wide-angle experimental region plotted as log(I) vs 2 as is commonly used in XRD and also in Figure S2.

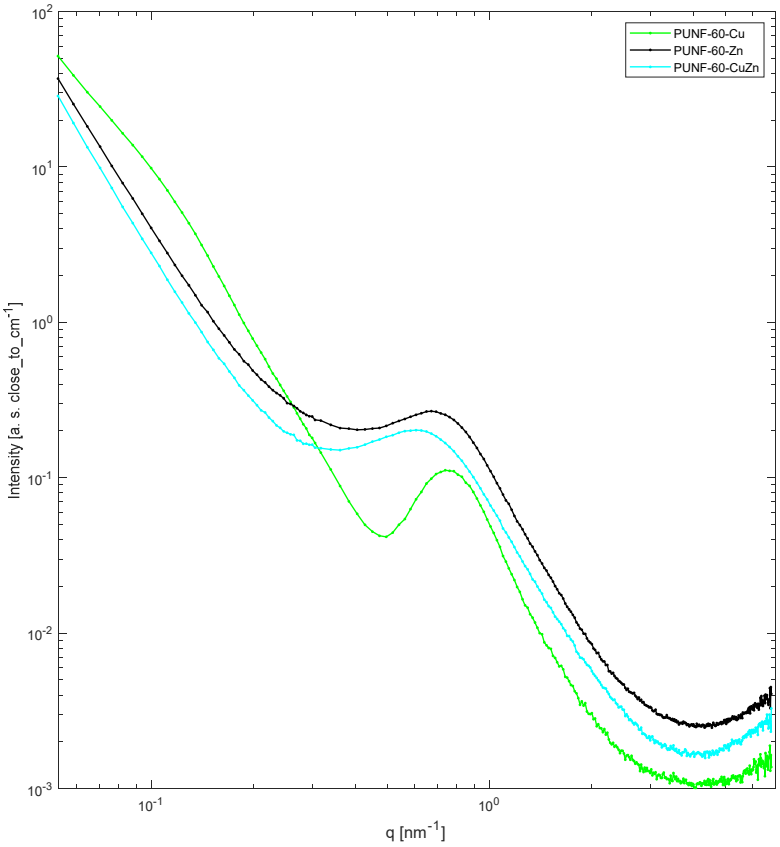

Figure S4. Small-angle region of the SWAXS measurements of the prepared PU/ferrite nanocomposites after subtraction of the pure PU films scattering.

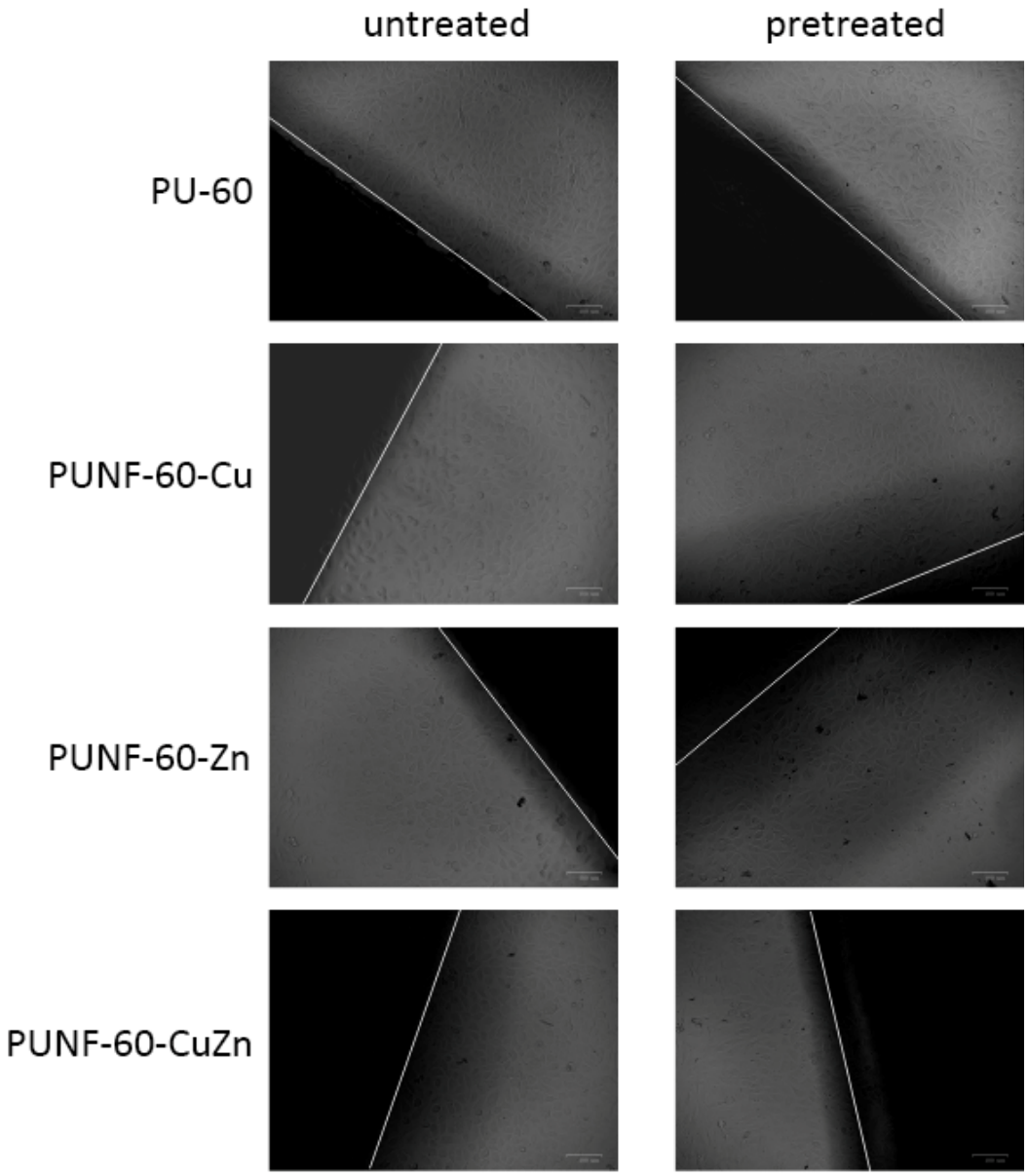

Figure S5. Photographs of pure PU and PU/ferrite nanocomposite films with EA.hy926 cells adhered around the of PU and PU/ferrite nanocomposite films.