

Synthesis and Characterization of Magnetic Nanoparticles coated with Polystyrene Sulfonic Acid for Biomedical Applications

Bo-Wei Chen^{1#}, Yun-Chi He^{2#}, Shian-Ying Sung^{3,4}, Trang Thi Huynh Le⁵, Chia-Ling Hsieh^{3,4*}, Jiann-Yeu Chen⁶, Zung-Hang Wei^{1,2} and Da-Jeng Yao^{1,2*}

1 Institute of NanoEngineering and MicroSystems, National Tsing Hua University, Hsinchu, Taiwan

2 Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan

3 Ph.D. Program for Translational Medicine, College of Medical Science and Technology, Taipei Medical University, Taipei, Taiwan

4 TMU Research Center of Cancer Translational Medicine, Taipei Medical University, Taipei, Taiwan

5 International Master/Ph.D. Program in Medicine, College of Medicine, Taipei Medical University, Taipei, Taiwan

6 Center of Nanoscience and Nanotechnology, National Chung Hsing University, Taichung, Taiwan

*Correspondence and requests for materials should be addressed to C.-L.H. (email: chsieh2@tmu.edu.tw) and D.-J.Y. (djyao@mx.nthu.edu.tw)

These authors contributed equally to this work

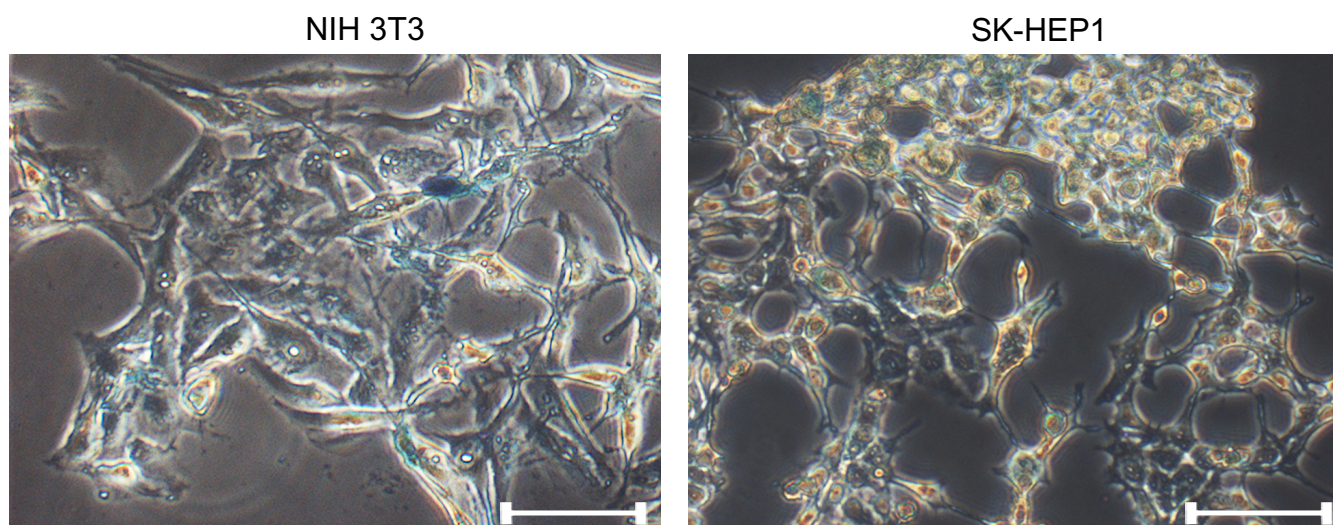


Figure S1. Prussian blue staining for PSS-MNPs-positive cells. The cropped images of Figures 4d,e ($400 \mu\text{g mL}^{-1}$) shows the cellular localization of PSS-MNPs at the cytoplasm around the nuclei of cells. Scale bar = $30 \mu\text{m}$.

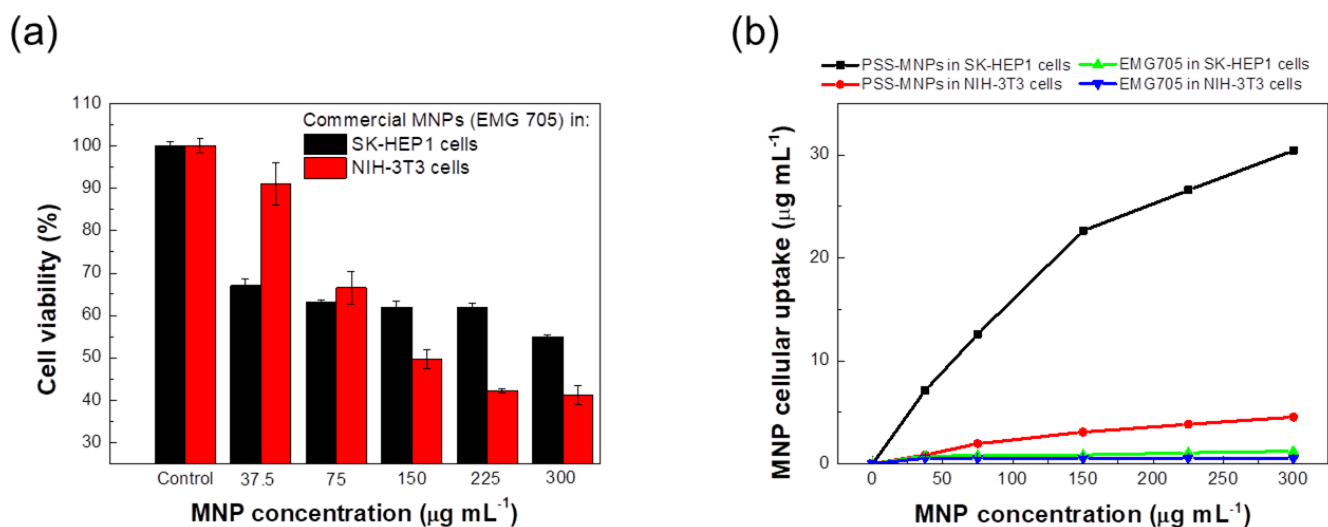


Figure S2. Cytotoxicity and cellular uptake of a commercialized MNP product EMG 705 (Ferrotec Corp.) in SK-HEP1 and NIH-3T3 cells. Cells were treated with EMG 705 at concentrations of 37.5, 75, 150 and 300 $\mu\text{g mL}^{-1}$ for 24 h and then subjected to (a) MTT cell viability assay and (b) Prussian blue assay for MNP contents. The data is presented as as mean \pm SD of 3 independent experiments ($n = 6$).