

## Supporting Information

### Light and immunostimulant mediated *in-situ* re-education of tumor-associated macrophages by photosensitizer conjugated mannan nanoparticles for boosting immuno-photodynamic anti-metastasis therapy.

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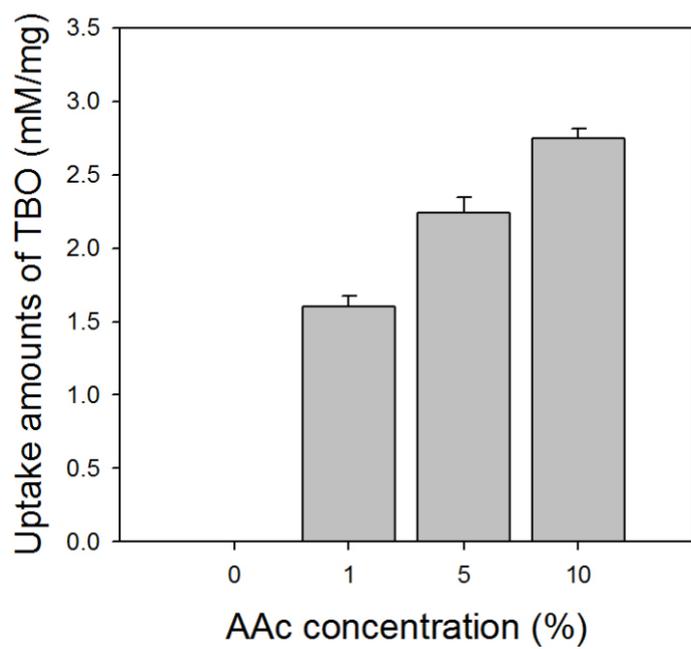
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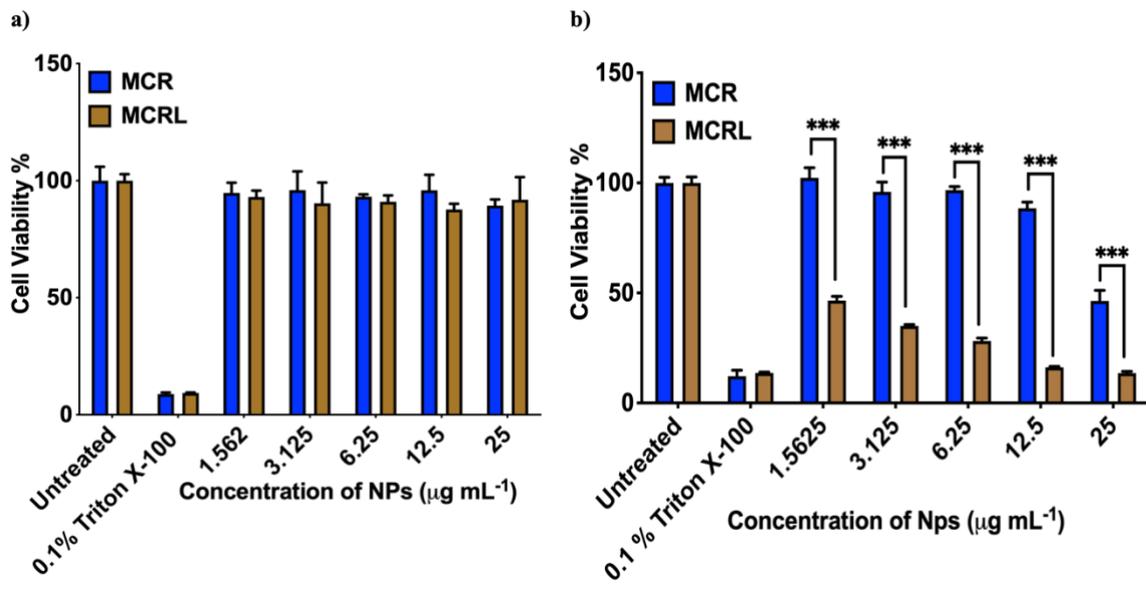
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#### Materials

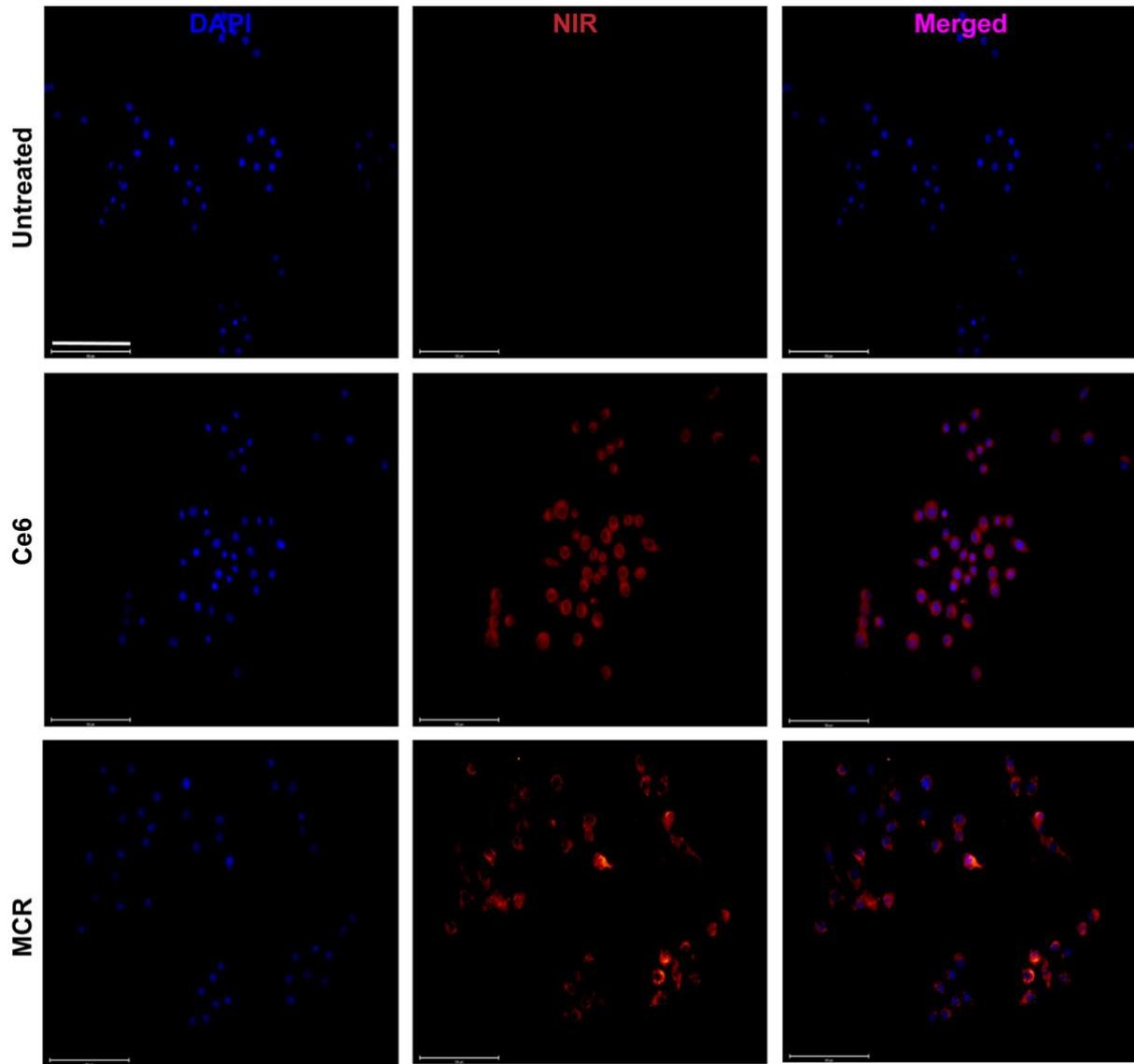
N-(3-dimethylaminopropyl) -N'-ethylcarbodiimide hydrochloride (EDC), N-hydroxysuccinimide (NHS), N, N'-dicyclohexylcarbodiimide (DCC), dimethyl sulfoxide (DMSO), dimethylformamide (DMF), dimethyl sulfoxide-d<sub>6</sub> (DMSO-d<sub>6</sub>), and mannan from *Saccharomyces cerevisiae* were purchased from Sigma-Aldrich (MO, USA). Chlorine e6 (Ce6) was purchased from Cyaman chemicals (MI, USA). Resiquimod (R848) was bought from BOC sciences (NY, USA). Fetal bovine serum (FBS), DMEM, trypsin-EDTA, and penicillin-streptomycin were purchased from Welgene (Gyeongsan, Korea). Spectra/Pro membranes were obtained from Spectrum Laboratories Inc. (Rancho Dominguez, CA, USA). Other solvents and reagents were of analytical grade and used as received.



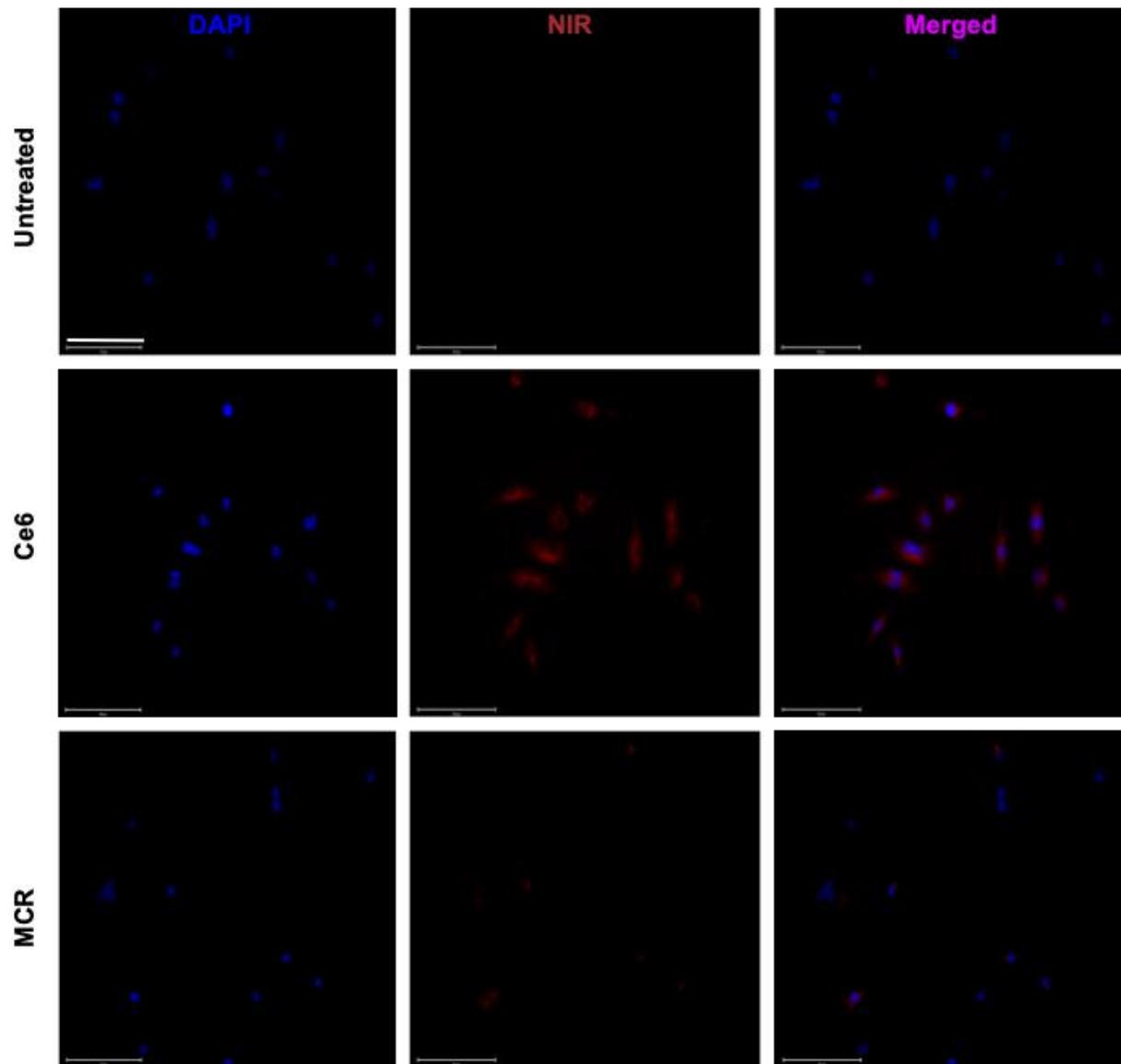
**Fig. S1.** Quantification for COOH groups in naïve Mannan and AAC grafted mannan estimated with Toluidine Blue O (TBO) assay.



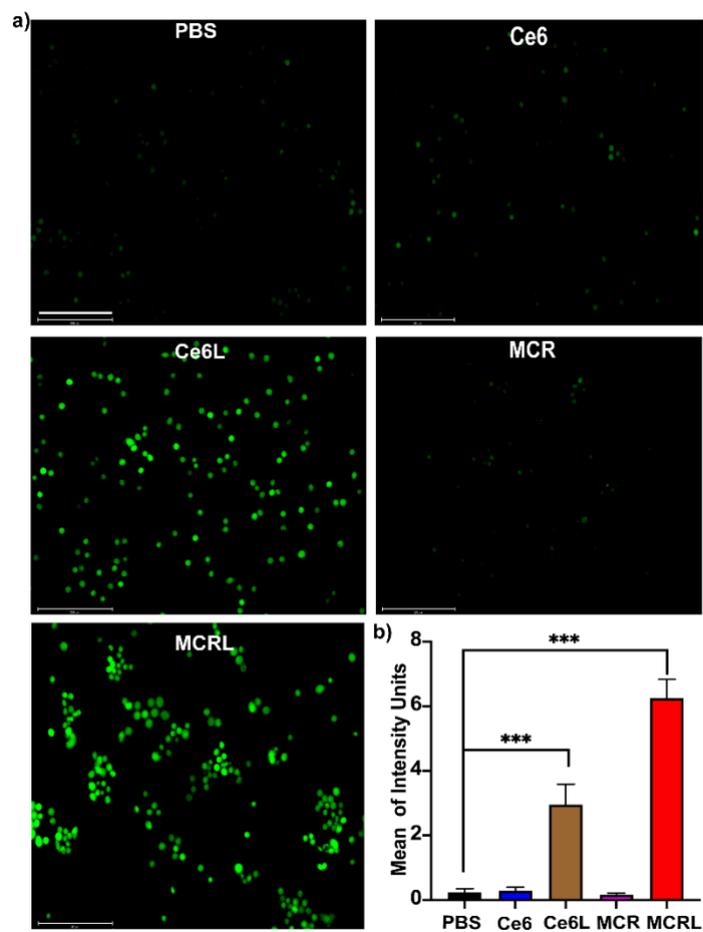
**Fig. S2.** Effects of MCR and MCRL on cell viability of a) CT-26 and b) M2-like macrophages using WST-1 assay.



**Fig. S3.** Fluorescence microscopy images demonstrating intracellular uptake of MCR by M2- like macrophages obtained from J774.1 cells. Scale bar = 100  $\mu$ m.



**Fig. S4.** Fluorescence microscopy images demonstrating intracellular uptake of MCR by M1- like macrophages obtained from J774.1 cells. Scale bar = 100  $\mu$ m.



**Fig. S5.** a) Fluorescence microscopy images. b) Bar graph depicting intracellular ROS production of MCR in the presence or absence of laser irradiation. Scale bar = 100  $\mu$ m.

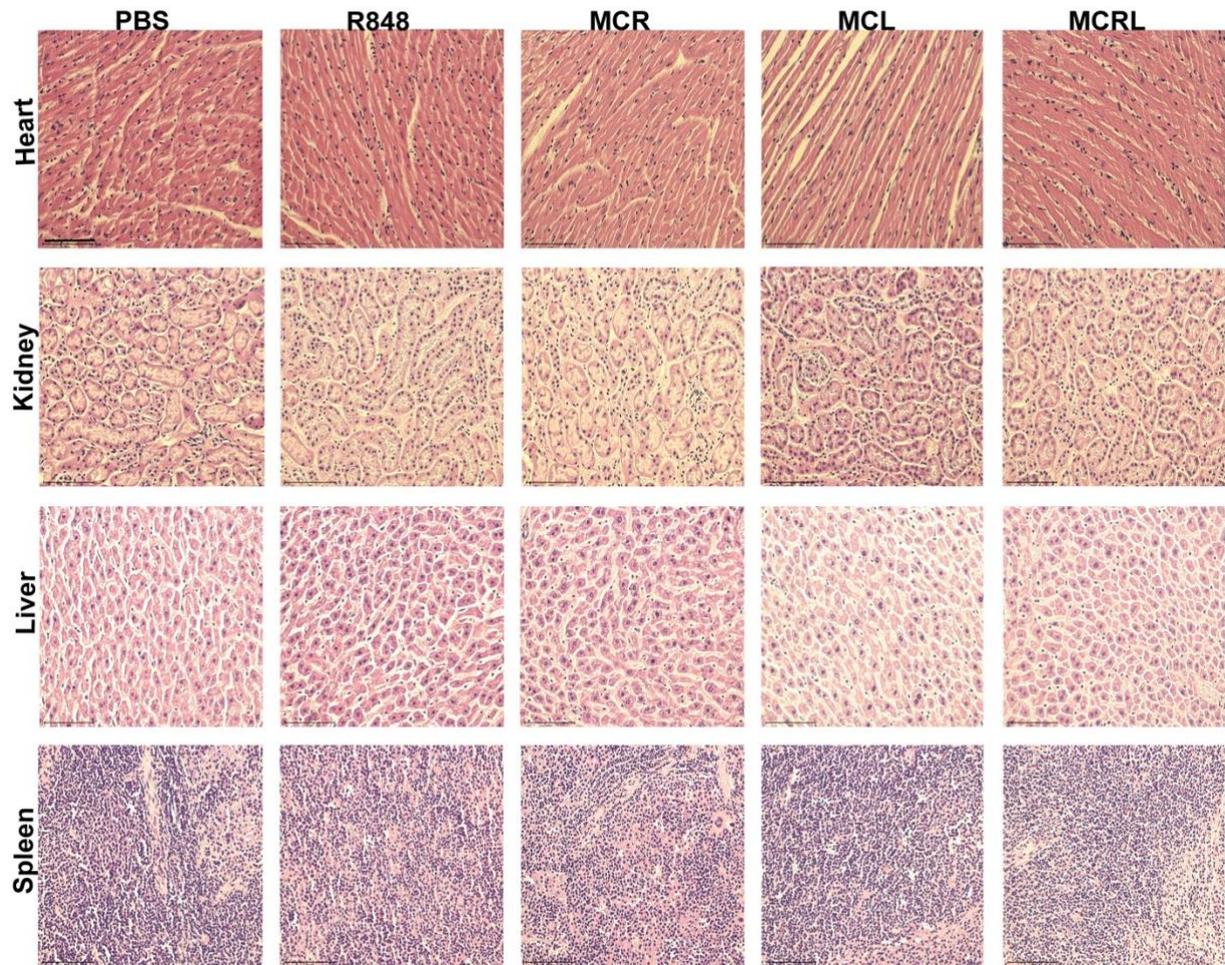


Fig. S6. Representative images of H&E staining of heart, kidney, liver, and spleen on day 18. Scale bar = 100  $\mu$ m.