Electronic Supplementary Material (ESI) for Biomaterials Science.

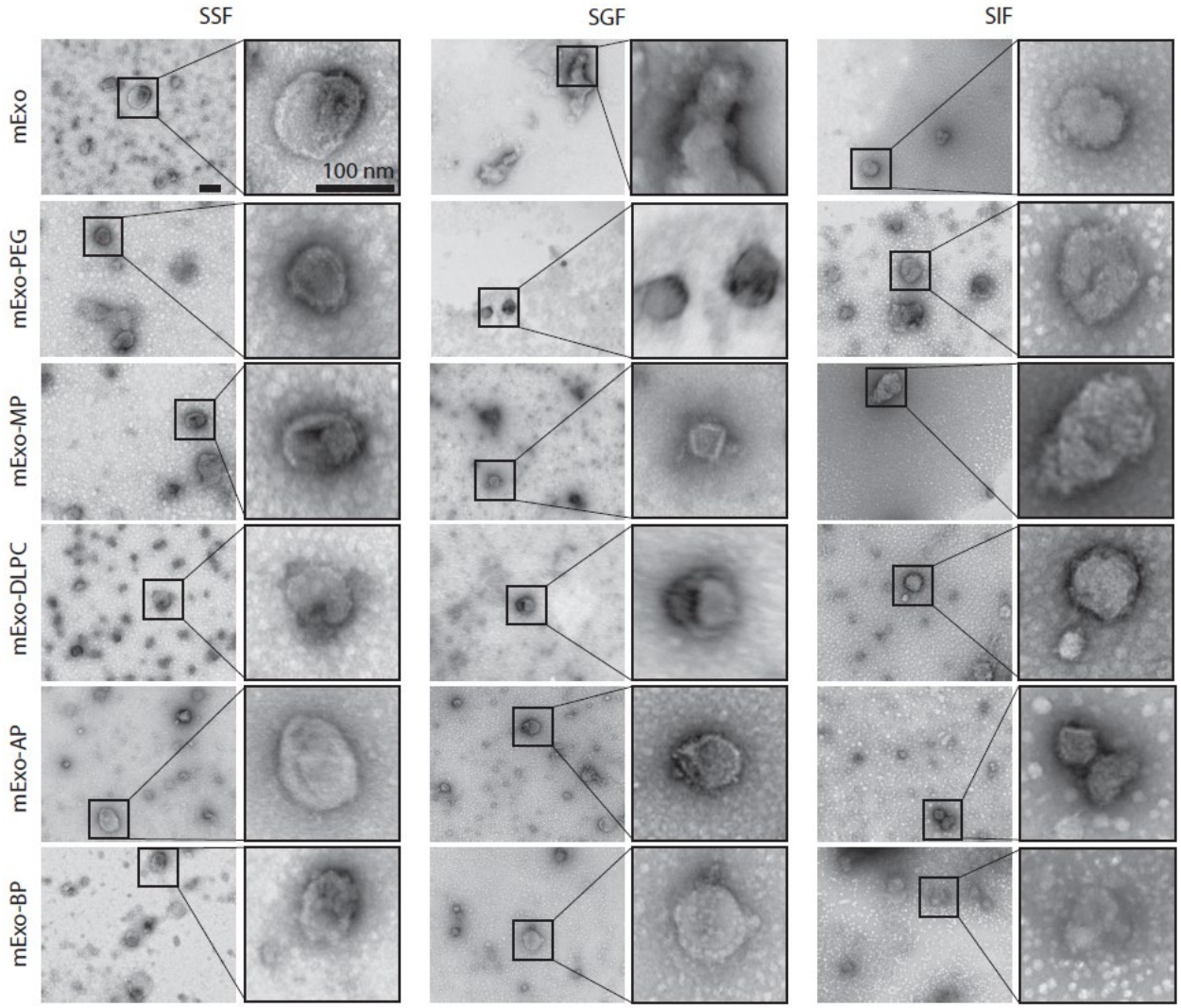

Figure S1. Transmission electron microscopy (TEM) images of both native and surface modified mExo after incubation in enzyme-deficient simulated saliva fluid (SSF, pH 7, 5 min), gastric fluid (SGF, pH 2.2, 2 h), and intestinal fluid (SIF, pH 7, 2 h). Scale bar = 100 nm.

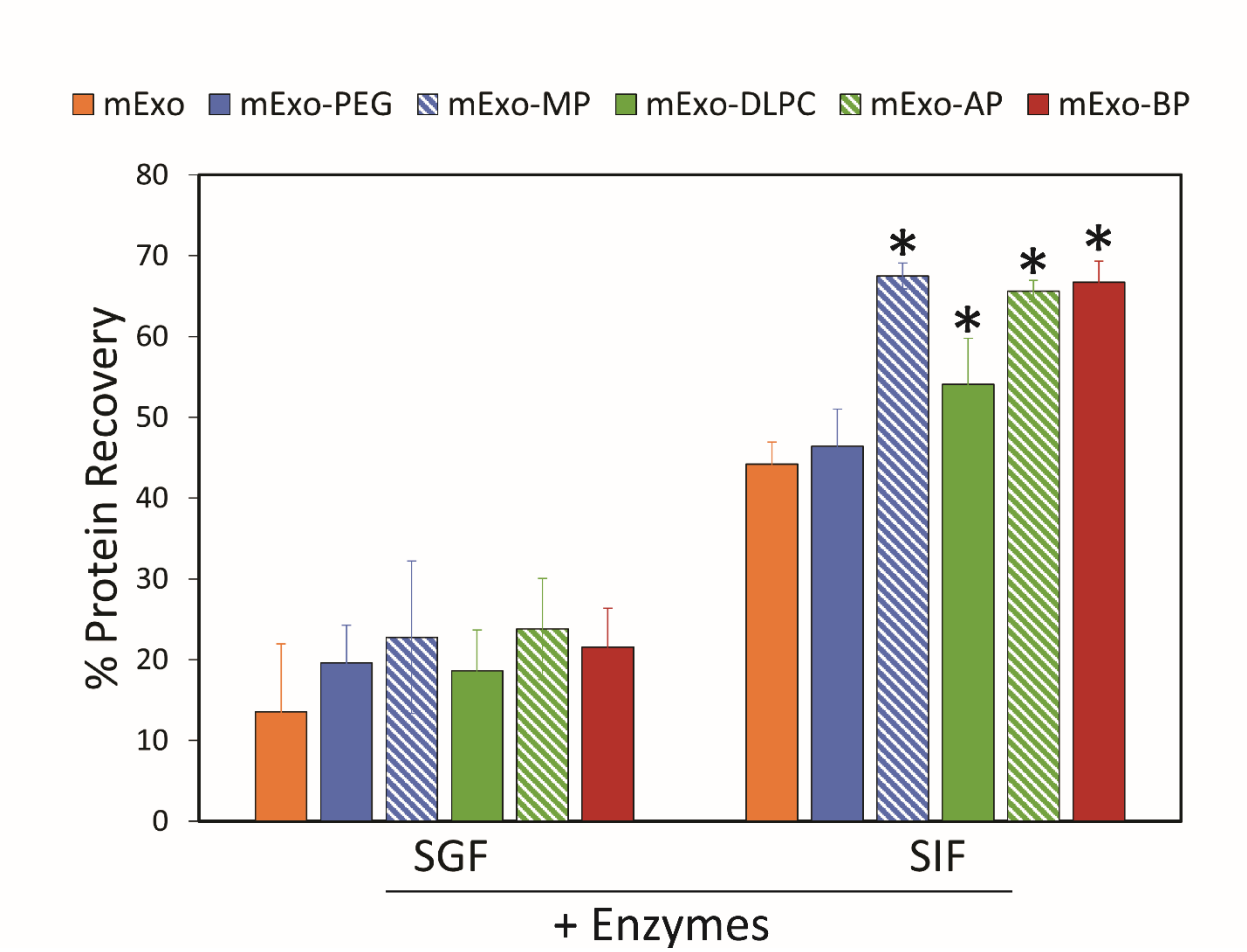

Figure S2. The total protein recovery of native mExo and surface modified mExo were measured after 2-hour incubation at 37°C in simulated gastric fluid with enzymes (SGF, pH 2.2) and in simulated intestinal fluid with enzymes (SIF, pH 7). (* vs. mExo after treatment. $p < 0.05$, N = 3 repeats/group).

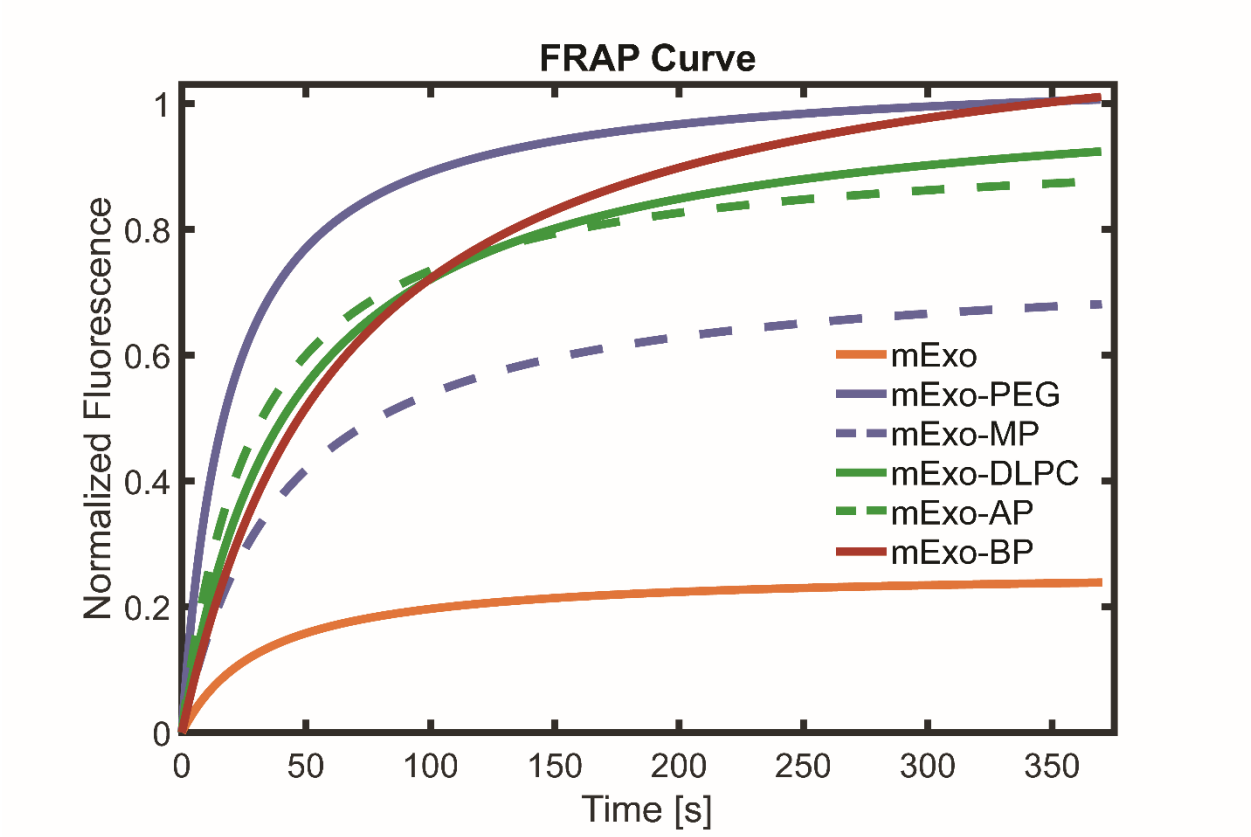

Figure S3. Fluorescence recovery after photobleaching (FRAP) curve for native and surface-modified mExo.

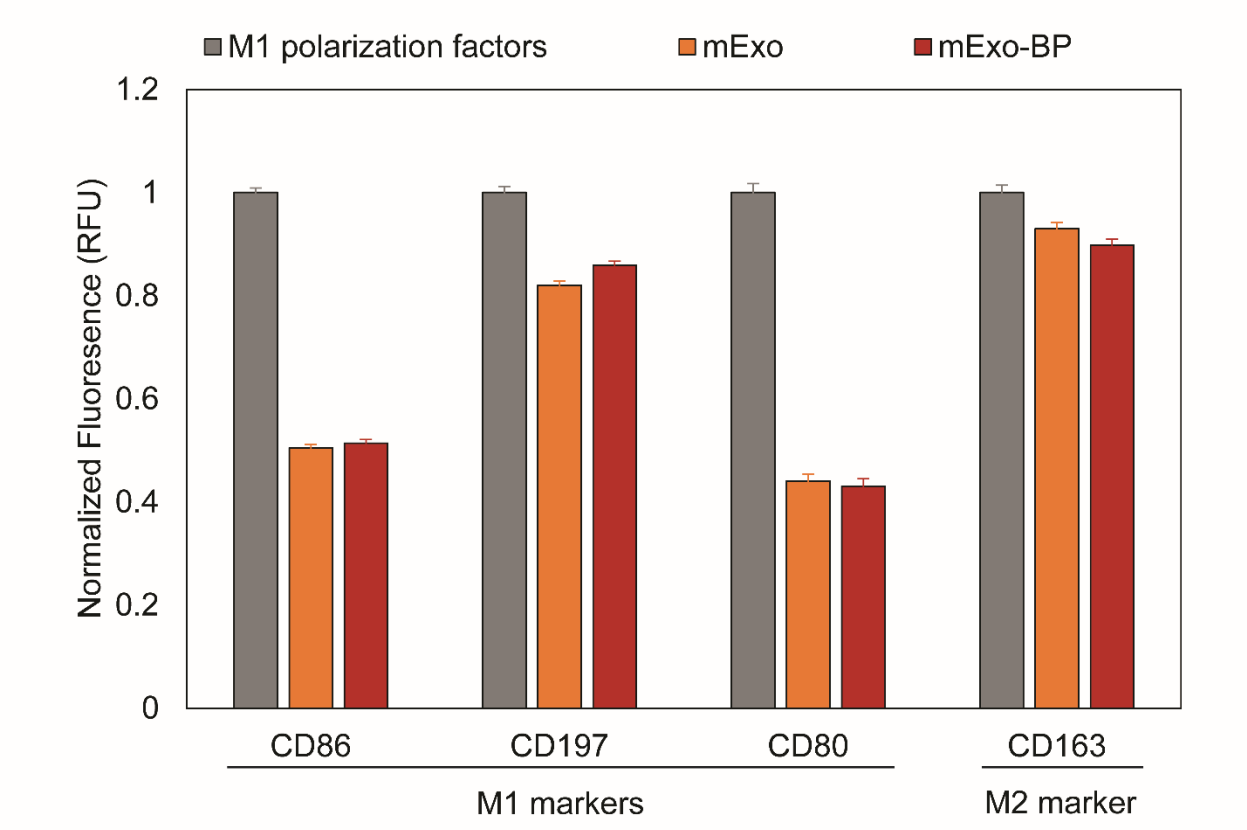

Figure S4. Relative surface expression of M1 (CD86, CD197, and CD80) and M2 (CD163) markers in mExo and mExo-BP treated macrophages compared to that in M1 polarized macrophages (positive control) as measured using flow cytometry.

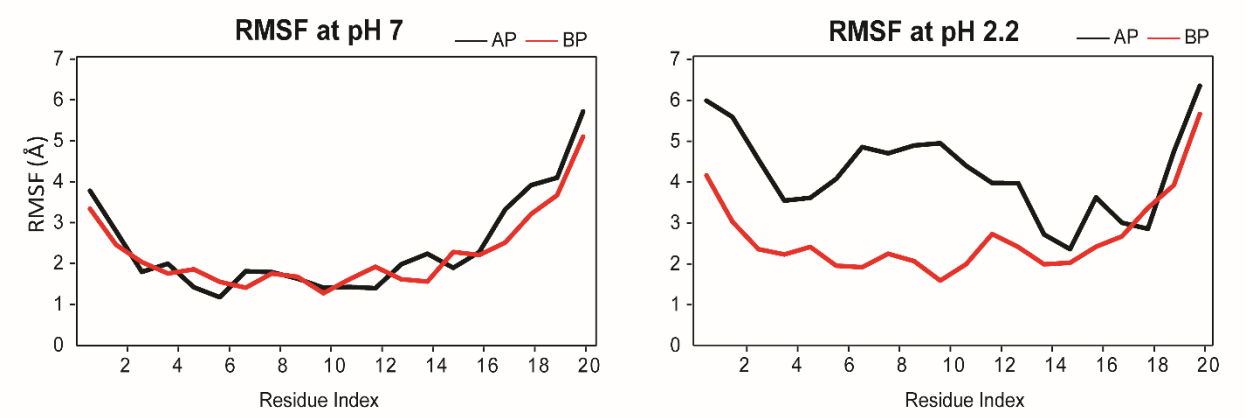

Figure S5. Root Mean Square Fluctuation (RMSF) profiles for AP and BP as obtained from Molecular Dynamic (MD) simulations at pH 7 and pH 2.2. The profiles provide a depiction of the local fluctuation of individual residues under different pH conditions.