**Supplementary Figure Legends**

**Supplementary Fig. S1.**

**Cell survival curves following photodynamic therapy**

Gastric and colon cancer cells (MKN28, MKN45, HT29, HCT116, CT26) were incubated with various concentrations of photosensitizer in culture medium for 24 h, irradiated with 13.9 J/cm2 of 660 nm LED light, and then incubated for a further 24 h. Cell viability was determined by WST-8 assay. Values are means ± SD of five independent experiments.

**Supplementary Fig. S2.**

**Subcellular localization of G-chlorin**

CT26 cells were loaded with 0.2 μM G-chlorin for 24 h and labeled with MitoTracker Green, LysoTracker Green, NBD C6 ceramide Green, or ER-Tracker Green. The cells were then imaged by confocal microscopy (original magnification, x 1000; scale bar = 5 μm).

**Supplementary Fig. S3.**

**Expression of mannose receptor family members in cell lines**

The mRNA expression levels of mannose receptor (MR), the M-type phospholipase A2 receptor (PLA2R), DEC-205/gp200-MR6, and Endo 180/uPARAP in cancer cells were measured by real-time RT-PCR. ACTB mRNA was used as an internal control. All data are presented as fold changes relative to the internal control. Data are means ± SE.

**Supplementary Fig. S4.**

**Western blotting of nuclear protein showed that PDT with M-chlorin increased nuclear translocation of Nrf2 gradually from 0.5 h onward after therapy**

CT26 cells were incubated overnight with 0.2 μM M-chlorin, and then irradiated with 13.9 J/cm2 of 660 nm LED light. Western blotting of nuclear protein was performed at 0, 0.5, 1, 2, and 4 h after PDT.

**Supplementary Fig. S5.**

**M-chlorin and G-chlorin accumulation in tumor regions**

A: Mice were given an intraperitoneal injection of photosensitizer (chlorin, G-chlorin, or M-chlorin) at a dose of 6.25 μmol/ kg. At 24 h after injection, eight tissue samples (tumor, skin, liver, spleen, kidney, lung, heart and brain) from the mice were analyzed by spectrophotometery, using a 405-nm violet laser for irradiation and excitation, with an output of 140 mW. The relative intensities measured by spectrometry were compared. Data are means ± SE. Treated groups and control group consisted of 4 and 3 mice, respectively.

B: The ratio of tumor to skin (tumor/skin) from the chlorin, G-chlorin, and M-chlorin PDT groups. \*: *P* < 0.05, M-chlorin vs. control, \*\*: *P* < 0.01, G-chlorin vs. control.

**Supplementary Fig. S6.**

**M-chlorin tended to accumulate with CD206 expressing TAMs**

Mice were given an intraperitoneal injection of photosensitizer (chlorin, G-chlorin, M-chlorin) at a dose of 6.25 μmol/ kg. At 24 h after injection, the mice were deeply anesthetized and sacrificed. The tumors were immediately excised and frozen fixed for fluorescence immunostaining examination. Frozen sections were stained using anti-CD206 (green fluorescence) antibodies. Photosensitizer activated red fluorescence, thus only TAMs incorporated photosensitizers were merged. Only M-chlorin was specifically targeted to anti-CD206 expressing TAMs. Magnification ×100.

**Supplementary Fig. S7.**

**Excess mannose reduced binding of M-chlorin to the macrophages and tumor cells in a dose-dependent manner**

(A) MKN45 and (B) M2-polarized THP-1 macrophages were cultured in 96-well culture plates at 5 × 103 cells/well overnight, and then co-incubated overnight with 0.2 μM photosensitizer (G-chlorin or M-chlorin) and various concentrations of mannose. Control cells without mannose were used as controls. Photosensitizer uptake was analyzed by microplate reader (Spectra Max, Molecular Devices, Tokyo, Japan). Data are the mean fluorescence intensity ± SE. \*: P < 0.005, vs. control.